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NOMINATION OF A. JAMES BARNES

HEARING

BEFORE THE

COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS UNITED STATES SENATE

NINETY-NINTH CONGRESS

FIRST SESSION

ON

THE NOMINATION OF A. JAMES BARNES TO BE DEPUTY ADMINISTRATOR, ENVIRONMENTAL PROTECTION AGENCY

APRIL 17, 1985

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NOMINATION OF A. JAMES BARNES

WEDNESDAY, APRIL 17, 1984

U.S. SENATE,
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS,
Washington, DC.

The committee met, pursuant to notice, at 10 a.m., in room SD-406, Dirksen Senate Office Building, Hon. Robert T. Stafford (chairman of the committee) presiding.

Present: Senator Stafford, Mitchell, Symms, Chafee, Bentsen, and Abdnor.

OPENING STATEMENT OF ROBERT T. STAFFORD, U.S. SENATOR FROM THE STATE OF VERMONT

Senator STAFFORD. The committee will please come to order.

Today's hearing is to consider the nomination of A. James Barnes to be Deputy Administrator of the Environmental Protection Agency. Mr. Barnes has a long-standing relationship with the EPA, having served as Assistant to the first Administrator of the Agency from 1970 until 1973. He returned in 1983 at the request of his former boss, Bill Ruckelshaus, to serve as General Counsel. Mr. Barnes has also held public office with the Departments of Justice and Agriculture. He has practiced law, and has taught and written on the subjects of business law and regulation. The nominee thus presents us with a record of public service and personal accomplishments.

Last February, at the nomination hearing for Lee Thomas, I felt compelled to refer to my personal deep interest in seeing that the Environmental Protection Agency be maintained as a strong—and most important—as an independent agency. I have watched carefully the major decisions made by Mr. Thomas since his confirmation as Administrator, and believe that he intends to implement the laws as he and his advisers believe they should be, but the Administrator will need the unwavering commitment of his staff—perhaps most of all, of his Deputy—if he is to follow the independent course he has chartered. He must rely heavily on the advice and judgment of those around him in making the numerous major decisions the law requires him to make, and he and the public must have confidence that the advice he receives from his top assistants is untainted by pressure from outside sources.

In order for Mr. Barnes to serve the Agency and the American people well, he must bring convincing evidence not only of his intelligence and service, but also of his ability to exercise good judgment in the face of strong outside pressure. Recent events, culminating in the hearing by the House Subcommittee on Investigation

and Oversight yesterday, may cause some to question that ability. I hope this morning's hearing will provide answers to those questions.

For my part, I will want to pursue with the nominee the questions of EPA's independence of OMB influence and what he can suggest to enhance public confidence in that independence. I will want to assure myself that, whether or not I agree with him on any particular position he advocates for the Agency, that his position and recommendation were arrived at independently of influence from outside the Agency.

I look forward to hearing from Mr. Barnes and to pursuing these issues with him.

At this point, without objection, I'll reserve space in the record for Senator Bentsen, the ranking minority member, who is unavoidably detained by another committee at the moment, for any opening remarks he might wish to place in the record or deliver personally.

[Senator Bentsen's statement follows:]

OPENING STATEMENT OF HON. LLOYD BENTSEN, U.S. SENATOR FROM THE STATE OF TEXAS

Thank you, Mr. Chairman.

Mr. Barnes, this Committee and the EPA will have our hands full in the weeks and months ahead as we continue to work on the important environmental issues before us.

The public perceives several of these issues as unresolved and overdue—and rightly so. This Committee and the EPA must respond in a manner which demonstrates that we are doing our best to protect the interests of the people of this nation.

It is not easy to formulate effective responses at a time of expanding and changing scientific evidence and in an atmosphere of polarization. The task is made more difficult if the public is not convinced of your motives. Yet this has been the situation on many issues.

The EPA can make life a lot easier for all of us by providing an objective workshop for these endeavors. More importantly, once the public trust is earned, we can produce answers that not only can work, they will work.

You will pay a key role in whatever success there is in achieving our environmental goals. You know from your own experience at EPA that the work will be difficult, but I hope that you will agree that progress in such an important undertaking is a rewarding public service.

I think we are making progress this year, but I will have several questions on specific issues.

Thank you.

Senator STAFFORD. I'm glad, Senator Mitchell, that you're here. Do you have an opening statement?

Senator MITCHELL. I do not, Mr. Chairman, other than to welcome Mr. Barnes and say we look forward to his testimony and to working with him in the coming months.

Senator STAFFORD. Thank you very much, Senator.

Now, Mr. Barnes, we would be glad to hear from you, except I should reserve, without objection, the right of other Senators who might wish to insert opening remarks in the record.

STATEMENT OF A. JAMES BARNES, NOMINEE TO BE DEPUTY ADMINISTRATOR OF THE ENVIRONMENTAL PROTECTION AGENCY

Mr. BARNES. Thank you very much, Mr. Chairman and Senator Mitchell.

I am honored to have an opportunity to appear this morning before the committee as the President's nominee for Deputy Administrator. With your concurrence, Mr. Chairman, I would like to submit the written statement I have for the record, and spend a few minutes addressing some of the issues that you raised. I know from conversations that I have had with you, other members, and the staff, that these are overriding issues, and that members of the committee want to be assured of a strong, independent EPA. I also know that you are concerned about EPA's relationship with the Office of Management and Budget.

Senator STAFFORD. All right, Mr. Barnes, we will place your written statement in the record and you may proceed as you wish.

Mr. BARNES. Thank you.

I think we both begin with the proposition that the public both wants and deserves to know that the judgments made about their health and well-being are going to be made openly, in accordance with the law; and using only appropriate factors. The laws that Congress has written and that we implement at EPA require that those judgments be made by the Administrator of EPA pursuant to standards that you have established.

There is the potential for questions to arise concerning whether those judgments are being made by the Administrator or whether they appear to be influenced or affected by processes outside EPA. During my first tenure with Bill Ruckelshaus at EPA, President Nixon instituted the so-called quality of life review and it led to questions about other Cabinet members and their constituencies improperly influencing the EPA process. Bill Ruckelshaus at that point was steadfast in his insistence that he was given the responsibility by law to make those judgments, and that the final decisions were his. When I returned to EPA with Bill Ruckelshaus, some of the same issues were there, raised by the Executive Order 12291 process. Again, Bill Ruckelshaus was steadfast. He would listen to issues that were raised by others, including those within the administration or OMB. If he thought a point was well made and he agreed with it, he would accept it; if not, he would vigorously pursue his position, including appeals up through the administration. Thus; he felt that whatever final decision he made was his. He recognized that the President has overallsupervisory responsibility over his appointees, but at the same time Congress had charged him, by law, to carry out his duty. Certainly, as Lee Thomas became Administrator several months ago, and as you've pointed out, there was a new element in the picture—the Executive Order 12498 process. As Lee has indicated to you, he views it as his statutory duty to ensure that all decisions are his—again, to listen and evaluate issues raised by others, but that the final responsibility is his.

To my mind, Mr. Chairman, the position that has been adopted by Bill Ruckelshaus and Lee Thomas is the only acceptable one. It is the only one that I believe is responsible to the public and to the Congress, and I commit that it will be mine during such time as I am at EPA, that the decisions I make will represent my best view of what the law and facts require.

Certainly a related question, then, is what we can do to make sure that this happens. I think it is incumbent on myself and

others to vigorously resist any intrusion on this responsibility and to make clear to those that we deal with how we view our responsibility under the law.

I think it is also important to come into a job with a very firm view of where one draws the line. It's a lesson I learned early from Bill Ruckelshaus: if you accept a job such as the one I would be embarking on, you can't be so attracted to that job or so dependent on it that if you're asked to cross the line—that is, to do something that you believe is contrary to law, contrary to the responsibility you have, or to your personal moral code, that you can't simply walk away from it. And as an aide to him at the time of the so-called Saturday night massacre, I saw a situation where that played out. I have been involved in other situations where that kind of line might be approached. I approach this job with this very much in mind. I will not entertain a course of action that violates this personal line.

Mr. Chairman, you indicated at the outset some concern about Agency action concerning asbestos; I would like, for a moment or two, to address that and would then be glad to go into more detail if you or members of the panel have questions.

Shortly after Lee Thomas indicated to me that I was his and the White House's choice to be Deputy Administrator, he asked me to visit with the Office of Management and Budget and try to find out why the proposed asbestos rules had not cleared that agency. We were both very concerned that we had rules dealing with a known human carcinogen. We could see that they had not moved through OMB, and we were anxious to get on with that process.

I came back to the Agency with a series of issues that OMB indicated were open. We began looking at those issues, I and others in the Agency. My legal staff and I began looking at one of the legal issues raised. I took an independent look at that issue and drew a legal conclusion that EPA was required by law to refer some of those risks to other agencies. It subsequently became clear to me that my original legal analysis was short of being able to draw that ultimate conclusion. When I realized that, I stopped the process. I asked that additional legal and policy analysis be conducted, and that additional questions be addressed. That process is now underway. Lee Thomas is in the middle of a series of briefings on asbestos. I am confident that the Agency is back on track and on its way to a prompt, responsible decision on this issue, and that it will be made in the next couple of weeks.

At this point, as I look back, I believe I made a mistake of legal judgment, not a response to improper pressure. The issue was set forth, and I took an independent look at it. And as I say, I believe I reached a legal conclusion prematurely. When I realized that, I did what I thought was the responsible thing to do, which was to put that decision back on track. I do not think that that particular instance is typical of what has been my record in Government. I might point to a couple of other things that have happened recently, one of them including asbestos that are better indicators. Last fall the Agency was presented a petition by the Natural Resources Defense Council asking it to examine the use of asbestos brakes. The word we had at that time was that certain people of OMB wanted us to turn that petition down. As I talked through that

issue with my legal staff, it appeared clear to me that, legally, EPA had to approve that petition; there was no basis for making a contrary finding.

I called the general counsel of OMB and advised him of our position. We pursued the issue with OMB legal staff and the EPA's position was, in turn, accepted by OMB.

Similarly, several weeks ago, there was a fair bit of press attention on the Agency's decision concerning heavy-duty trucks. Again, very significant questions, including legal questions, were raised by the Office of Management and Budget. I led the Agency team in a top-level staff meeting at OMB. We vigorously pursued what we believed were the correct legal interpretations, from the facts as we saw them. The OMB staff did not agree and, as you know, Lee Thomas then raised those issues with David Stockman, and EPA's position was affirmed.

At this point I have now had about 9 years of Government service in a variety of positions at EPA, the Department of Justice, and the U.S. Department of Agriculture. I believe I have established a strong, positive record and hope that the committee can make a decision on the basis of that record.

In conclusion, I would like to say that I gave a great deal of thought to the decision before deciding whether or not to accept the nomination as Deputy Administrator. As you've pointed out, the job of Administrator and of Deputy are among the most difficult ones in Government. There is a never-ending series of scientifically, technically, and legally complex problems. There is a lot at stake in terms of protection of public health. We are, in decision after decision, faced with a broad range of views and interests, and sometimes—as you saw from the questions during Lee Thomas' confirmation, relating to the tall stacks issue—there are strong differences of view on how the issues ought to be resolved, even within this committee.

In addition, EPA is organized in a way to encourage very vigorous and full debate of issues within the Agency and between competing offices. Virtually all of those issues are pushed to the top for the Administrator and Deputy to resolve. There are 11 Assistant Administrators, 10 Regional Administrators, a number of staff offices that all report to the Administrator and Deputy. In other words, there is a very big field to keep one's eye on.

It is an important job, and one that I think needs to be done well. My approach in Government service has been to try to make Government work. That is the view that I bring to this job. I would hope that I would have your support and confidence for the position and, if confirmed, would have the opportunity to work closely with you and the committee to achieve the objectives that I know we share.

Thank you, Mr. Chairman.

Senator STAFFORD. Thank you, Mr. Barnes.

Now that Senator Bentsen is here, I would point out to him and Senator Chafee that we have reserved the right for opening statements if either you, Senator Bentsen, or you, Senator Chafee, have one, either to be placed in the record or to be given.

Senator BENTSEN. Mr. Chairman, I'll place mine in the record, and I apologize for being late. It's the same old problem, conflicting dates.

Senator STAFFORD. The Chair stated that when we opened.

Senator Chafee, do you have anything?

Senator CHAFEE. Mr. Chairman, I don't have a statement. Mr. Barnes has very dutifully tried to see me, on about five different occasions, and on those occasions I wasn't available, so any opportunity we had not to meet was not Mr. Barnes' fault, it was my fault. I thank you for trying to come by, and I'm sorry that intervention after intervention occurred that prevented us from having a little chat. But I appreciate the effort you made.

And I have no statement, Mr. Chairman, except that I note that Mr. Barnes went to Harvard Law School, so obviously he starts with a big plus.

Senator BENTSEN. Well, I thought, after talking to him about it, that he could probably outgrow that.

Senator STAFFORD. Well, now we have both sides of that.

Gentlemen, I don't know how long our questions might run. I have one or two. Might we try 5 minutes apiece at the first run here, and see how we go? If that's agreeable, we'll do it that way.

Mr. Barnes, having briefly reviewed a summary of the voluminous record prepared for yesterday's hearing in the Subcommittee on Oversight and Investigations in the House, I'm left with one overriding concern. Whatever the reasons for your conclusion in late December or early January that EPA was required to refer the asbestos rulemaking to other agencies, your decision—had it been implemented—would have delayed regulation of a known carcinogen by at least a couple of years. I can understand that decision if it were absolutely clear that EPA does not have the authority to regulate, but that's not the case. In fact, you have partially, as I understand it, reversed your decision since it was announced on February 1.

What concerns me, then, is the apparent ease with which legal complexity or OMB's suggestions reduced your sensitivity to the need to protect the health of the American people. I'd like to hear your response to my concern and any assurances you can give beyond those you have stated to allay my concerns that insensitivity to public health might recur in the future.

Mr. BARNES. Mr. Chairman, I'll try to respond to several facets of that.

First of all, I think there can be no question—and there was none, as the Administrator and others of us talked about this issue—that we were committed that asbestos is absolutely at the top of our list of substances that need further regulation. To the extent that it looked like we were going to have to refer, we did take steps to try to assure ourselves that further regulation by other parts of the executive branch was going to be done responsibly.

I might, then, go back further and elaborate on the points I made in my opening statement. Again, as I have looked back on this situation—about which I have spent a lot of time thinking—I have tried to review how it happened. Simply stated, as I looked at the facts, I came prematurely to a conclusion. I did this at a point

when I was moving offices between the general counsel's office and the Deputy Administrator's Office and did not take as much time to work out the details as I should have. And once that was realized we stopped that process and initiated a further look at the legal and policy issues. At this point I simply want to say when I am in a job and I realize that there is new information or that the previous perspective was incorrect, I want to feel that I can go back, examine that, and do the best I can to try to put the issue on the right track.

Senator STAFFORD. Well, thank you, Mr. Barnes. I hope that you will always keep in mind that the public health of the American people is the foremost consideration for your agency, and for this committee.

Mr. BARNES. Yes, sir.

Senator STAFFORD. Executive Order 12498 requires agencies to submit proposed regulatory agendas to OMB before ever beginning rulemaking. Decisions as to what rulemakings will be undertaken and what alternative approaches may be considered will be made without public knowledge or participation. The decisionmaking process will, apparently, not be in the fishbowl that Bill Ruckelshaus spoke of as the setting for important EPA decisions.

Can you suggest how EPA might make public, enough information about the process so as to allay concerns of myself and others that decisions affecting millions of people are being made behind closed doors?

More specifically, will you agree to submit, after consultation with the committee, proposals to maximize congressional and public access to the decisionmaking process required by the Executive order?

Mr. BARNES. Yes, Mr. Chairman, I'll be glad to do that. And I might add there that this is a topic that Lee Thomas and I have spent some time discussing over the last couple of months. We discussed it again yesterday, and I would be very, very pleased to respond positively to your request that we come back to you in writing with our suggestions on how this is to be handled. I think we share your concern that this process has to be played out in a way that gives you and the public confidence that those decisions are being made openly and for the right reasons.

Senator STAFFORD. All right.

One final question. Yesterday at the House hearings it was stated that when applying a discount rate for avoiding future deaths in terms of today's dollars, a human life is valued at under $25,000. Does this represent the kind of thinking we can expect to see at EPA under the requirements of Executive orders and OMB directives?

Mr. BARNES. Mr. Chairman, this does not represent the thinking of Lee Thomas or myself. As I indicated yesterday, while I am a lawyer by training, not an economist, I do understand the concept of the present value of money. However, I have a great deal of ethical difficulty with a concept of applying a discount factor to human life. The lives of my three children are worth every bit as much to me 10 years from now as they are now. I personally reject that notion. I have talked to Lee Thomas about it; I know that is not one that finds favor with him. Regardless, I think it's our view that

if there's going to be some debate on that issue, it needs to take place out of the context of the regulatory decisions we need to make; in fact, probably outside the context of the Federal Government.

Senator STAFFORD. Well, thank you. I know that some verdicts that juries have been rendering in the last couple of years would place a $25,000 limitation on life as a very, very low figure, and I guess that only some of my nonadmiring constituents in Vermont would put the Senator's value at less than $25,000.

Senator Mitchell?

Senator MITCHELL. Not even in frugal Vermont would they value you at less than that, Mr. Chairman.

Mr. Barnes, I'd like to ask you questions about a couple of specific subject areas. The first is indoor air pollution and radon. At a recent hearing on Mr. Thomas' confirmation and at an EPA budget hearing, I asked for information on the subject of indoor air pollution, particularly radon gas. In summary, the Agency's response to me was that while EPA is the cochair of an interagency task force addressing indoor air pollution and is using $2 million to design an indoor air strategy in fiscal year 1985, the Agency sees no need to provide any funding for continuing the work of the task force into fiscal year 1986. I was further advised that since EPA does not have authority to regulate indoor air pollution, therefore it should not study the subject or take any other action.

At the same time, approximately, that I received these reponses from the Agency, I learned of a preliminary proposal by the EPA's Office of Radiation Programs for a Radon Assessment and Mitigation Program. That document states, and I quote, "There is little dispute that exposure to excessive levels of radon poses a significant threat to public health." And I quote further, "We should not move a develop a national strategy." The paper repeats estimates that we on this committee have heard, of between 5,000 and 20,000 lung cancer deaths each year in this county from radon, and proposed a program effort involving 20 staff persons and almost $5 million of contract funds over a 5-year period.

Now, clearly there are different views within EPA on the subject of the public health impact of radon and what should be done about it, so I'd like to ask a series of related questions and perhaps you could comment on them together in narrative form.

Mr. BARNES. Certainly.

Senator MITCHELL. From your work in the Agency to date, can you shed some light on the internal debate, the risk posed by radon gas, and the appropriate way to respond?

Mr. BARNES. Sure——

Senator MITCHELL. Wait, I want to ask a whole series of questions and then you can respond to them. They're all related.

What role has OMB had in these discussions? Specifically, I've been told that the staff, in the 1986 budget, proposed $4 million for radon; Bill Ruckelshaus cut it to $2 million, and then OMB cut it to zero. Is that true? If it is not, what is the situation?

And finally, I ask if you will provide this committee with a copy of the most recent radon program proposal, together with a statement outlining the Agency's reasons for rejecting that proposal.

Mr. BARNES. Certainly, Senator. Part of that, if I can, I am going to have to provide for the record. (See p. 50.) I have no direct knowledge to those prior budget discussions, except that it was my understanding that the Agency, at times, had proposed to put small amounts of money into indoor air pollution research, that those requests had not been approved by the Office of Management and Budget. I think on at least a couple of occasions that Congress has put that money back in. I'm not sure of what happened during these last budget discussions, since they took place before I moved into the Acting Deputy role. What I can tell you is that the indoor air issue is one that Lee Thomas and I spotted early during our briefings in the Agency as one of considerable interest and concern to us. As you have indicated, we have seen reports that suggest that we are finding levels of radon in private homes—you mentioned some in Maine. I believe we've also done some work in Pennsylvania that shows that radon there is, at present levels, considerably above what we find acceptable in and around commercial facilities. That is of great concern to us. We have had several briefings, and Lee has asked for follow-up briefings.

I do not know what the status of the particular radon proposal you referred to is. I would like to provide that for the record. However, I would like to assure you that indoor air is an issue that warrants a very thoughtful and through look for the Agency. We realize that people spend, in many cases, 80 percent of their time indoors, and that some studies suggest that the levels of pollutants that we're regulating in the outdoor air exist at higher levels indoors than we are permitting outside. I think that this is an area that it's only responsible for us to look at. We have to be concerned about the total human exposure to these polluants. If the exposure is in the indoor environment, I think it's reponsible for us to examine that and to come forward with what we know in that regard.

Senator MITCHELL. Well, I welcome your statement, Mr. Barnes. Mr. Thomas made similar statements, but I would remind you that the position that the Agency has taken is diametrically the opposite of what both you and Mr. Thomas have said, and that is that we shouldn't bother to do anything about this, that we don't have the authority or the interest or for some reason. And what I'm asking you to do is to take a look at that Agency position and in addition to expressing concern about the problem, which I welcome and am heartened by, indicate to me what the Agency plans to do about it.

Do I have time for one more question?

Senator STAFFORD. Sure, why don't you go ahead.

Senator MITCHELL. I don't want to go into Senator Chafee's time.

Senator CHAFEE. I just have a couple of questions then I'm going to have to leave.

Senator MITCHELL. I'll defer to Senator Chafee.

Senator STAFFORD. Go ahead, Senator Chafee, and then we'll come back to Senator Mitchell. If it's been that hard for Mr. Barnes to see him, he must be awfully busy, so we'd better let him go.

Senator CHAFEE. I just want to recount that my constituents haven't valued my life as high as $25,000, and I will recount one story. I was Governor at the time, and planned to go to a wake of a

veteran politician. I remember it was the fall because the helicopter landed in a vacant schoolyard and we walked across, and I remember kicking the leaves in the street as the pilot and I walked across to go to this wake in the afternoon. And a lady passed by—I will say this, she had sneakers on, and she said, "Where are you going? Going to the wake?" And I said, "Yes, we are." And she said, "I wish to hell it was yours."

I had previously told the pilot that this was tough territory, and he said, "God, this is tough territory!"

Mr. Barnes, I want to talk about section 404 a little bit. I urge you, as I've urged Mr. Thomas, to use the full authority of your office to enforce the law on section 404 as I see it and, as I hope, you see it. In matters where the Corps of Engineers isn't doing anything, I'd like you to make your own decisions and not just leave it to the Corps of Engineers. Have you got any comment on that?

Mr. BARNES. Senator Chafee, I know that the 404 Program has been and is a very critical part of the Clean Water Program, that these estuarine areas are among the most sensitive ecological areas that we have in the country, and that we do need to be careful and very protective of those areas. I have, again, participated with Lee in a number of briefings regarding 404 issues. He has pulled the 404 Program up for review and has asked that Milt Russell and former Regional Administrator Charles Jeter pull together a number of those issues for him, so he can review the Agency's overall policy. I know he has had some meetings with Acting Assistant Secretary of the Army Dawson to discuss the Agency's concerns about the relationship with the corps, and I know he plans to be in a position to fully explore those issues, then, with you. I think you're contemplating an oversight hearing, are you not?

Senator CHAFEE. We are, and I just want to say to you, when you're dealing with the Corps of Engineers you're dealing with a tough crowd. That's not meant to slight the corps. They have their views on the whole program, and I just want the Environmental Protection Agency to be tough and demanding in that position.

Mr. BARNES. Right.

Senator CHAFEE. Second, on the Superfund. My view on the Superfund is that it's taking a terribly long time. I know that Mr. Thomas is very familiar with Superfund and the difficulties there from the prior role that he played in the Agency, but I just so firmly believe that we've got to get on with it; and if every T isn't crossed and I dotted, nonetheless we've got to plunge ahead in these cleanups. It's always seeping down into the ground and every day lost takes 10 days or more to recover with subsequent actions. And so therefore, full speed ahead; and I know that in your previous job you dealt with some settlements. I encourage you to make settlements, and I, for one, am not going to second guess every settlement you make on the Superfund. I think they're not all going to be perfect, and people afterward can come and say they should have gotten more and why didn't you do this and why didn't you do that. The alternative is to go into lengthy court cases where everybody loses and time is delayed. So follow the settlement course, obviously using your best judgment. We're hiring you for this job and I, for one, am not going to be second guessing everything you do.

Mr. BARNES. I very much appreciate that, Senator Chafee, and I agree that with the range of problems that we have out there, we do need—as we have tried—to step up both the removal programs, and to make some decisions and get on with life. There are a large number of hazardous waste sites, and we have to step up and do the most responsible thing that we can in terms of settlements and, as you say, get on then with the balance of the cleanup.

Senator CHAFEE. I personally, after thinking this over, have come more and more to the view that the dollars are best spent in cleanup and that the subsequent mitigation is important, but it's far more important, I think, to get on with the cleanup because the longer we delay, results in subsequent mitigation problems to deal with. And some of these just become impossible to thoroughly clean up. I know we've dealt with Superfund here and we're going to be dealing with it again, but my own view, as I've spent more and more time on this, is that the thrust should be on the cleanup. And by cleanup, I mean removing the drums, removing the causes rather than trying to spend so much time monitoring subsequently to see if everything is just perfect.

Mr. BARNES. Well, Senator, again, I believe, as Lee Thomas came back, we have tried to significantly shift resources in that direction in terms of emphasizing the emergency removals, getting the drums and liquids and so forth off of the site, and doing that in advance of the legal wrangling that you talked about. I agree that our resources are better spent actually doing that cleanup than they are investing in the kind of transaction costs involved in lengthy legal battles. If we're going to have the legal battle, it is better to put it on the other end of the process, after the threat to health and the environment has been removed.

Senator CHAFEE. Thank you, and I wish you well on your job.

Senator STAFFORD. Thank you, Senator Chafee. Your remark about the wake reminded me of a distinguished citizen of Vermont who had made a resounding speech and afterward a lady came up to him and said, "Gee, that was a great speech. I hope that will be published." And he said, "Yes, it will be, I expect posthumously." And she said, "That's great; the sooner the better."

Senator Mitchell.

Senator MITCHELL. Well, I wanted to make one additional comment on a subject that Senator Chafee was pursuing.

I don't disagree with him fundamentally, but you've practiced law and you obviously are aware that if you settle every case, your settlement leverage declines.

Mr. BARNES. That's certainly true.

Senator MITCHELL. You've got to try a case every now and then; you've got to win a case every now and then; you've got to impose a big fine or, in the criminal law practice—all lawyers in the practice of law are generally assessed by their peers, and you've got people in certain fields of law and everybody knows the settlers don't dare try a case. They get in settlements about half of what people who dare to go and try a case win every now and then. So I agree with Senator Chafee that we ought not to be spending too much time on litigation, but I don't think you ought to go out of here with the view that everybody on this committee thinks you ought to go settle every case. I mean, in order to be in a good bargaining posi-

tion on settlement, the people you're negotiating with have to understand that you are ready to go to court, try a case and win a case, and impose a very substantial penalty; otherwise, you might just as well give up the ghost before you settle. That requires judgment and skill. Frankly, the reason we get into that is that the experience of the years 1981 to 1983 led the committee to distrust the judgment of the people at EPA.

You've been asked what is really rather a fundamental question, are you going to enforce the law?

Mr. BARNES. That's correct.

Senator MITCHELL. Those questions aren't asked in a vacuum; they're asked out of the experience that we've had. I think there is widespread on this committee—I can't speak for others—we think that Lee Thomas is a good man and that he's going to enforce the law. What we know about you, we believe the same thing. So it's a matter of judgment, and we're much more willing to trust the judgment of someone who we think is committed to enforcing the law and not to obstructing enforcing the law, which was the case before.

Senator CHAFEE. Could I just add one thing to that?

Senator MITCHELL. Yes.

Senator CHAFEE. I think what Senator Mitchell said, obviously, is absolutely right, and I didn't want to give the impression—I hope you didn't get the impression—that I just say, settle every case. All I'm saying is that we've had experiences here where a settlement was worked out, and I refer to that Indiana case, *Seymour,* where people come in afterward and are second guessing every single point. It seems to me that, as you shouldn't settle every case, I don't think you should be afraid to settle. And the easiest way to have everything determined—that your skirts are clean—is to go to trial, and then the judge decides; and then you can say, "Well, that's what happened." I think that sometimes it requires some courage on the part of the Government to settle a case because there are going to be plenty of Monday morning quarterbacks around.

All I'm saying is that it is my hope that you would not settle every case, but also that you not be afraid to settle. That's all I had to say.

Senator MITCHELL. Now that you have a clear message from us on that subject, may I proceed to one other subject area, Mr. Chairman?

Senator STAFFORD. Sure.

Senator MITCHELL. Mr. Barnes, as you may know, Senator Stafford and I have been deeply involved in proposed legislation to deal with the problem of acid rain. You were with Bill Ruckelshaus and you will recall well, I am sure, that at the time of his nomination by the President, a nationally televised performance occurred at which the President told Mr. Ruckelshaus and, through the medium of the television cameras, the Nation, that his No. 1 priority was acid rain. No. 1. Highest item on the agenda. And he wanted him to go out and study the problem and come back with some kind of a decision on this.

As the problems with Mr. Ruckelshaus' predecessor faded from the front pages and off the national news, so, it seems, in a parallel

way did interest in doing something about acid rain. And after many months, in which we literally stopped all action because the position of the administration was, "Well, we are developing a program so you shouldn't act until we come up with our program"—it was a sensible view at the time—we wasted nearly a year, at the conclusion of which nothing happened. The position was unchanged. We all know what happened. Mr. Ruckelshaus proposed a very modest and, frankly, what I would regard as a pitifully inadequate program which itself was rejected by OMB and the White House.

I want to ask you, have you played a part in the formulation of administration policy on this subject in the past? Will you play a part in the future? And what, if anything, can you tell us about any possible changes in the administration's position or any action of any kind?

Mr. BARNES. You've asked a three-part question. The answer to the first part is no, I did not play any part in the formulation of that policy. In the past, Bill Ruckelshaus did spend a great deal of his time, when he first came to the Agency, working on acid rain. But those issues were not seen as predominantly legal, and there were other issues on which I focused at the time.

The answer to the second question, whether I will play a role, is yes. You suggest that it may have faded from some people's view as an immediate issue. I don't think if you asked Lee Thomas what he thinks are the biggest issues in front of him at the Agency at this point that acid rain would be omitted. I think we clearly have a responsibility to continue to keep our eye on that major problem.

The third part of your question how should we proceed? I think we know there is a wide-ranging research program in place. From time to time we're going to get results of that research back. I believe we're expecting the eastern lakes survey soon. We're working to embark on the western lakes survey. It seems to me that the responsible thing for us to do, as we get each of those major new pieces of research, is to reassess, "Where does that leave us, now, on the question of acid rain?" I would agree with the posture that Bill Ruckelshaus and Lee have taken that it's hard to say that at this point in time we're going to know enough. But we do know that we've got a number of these major exercises in place. It is the strength of the data and the findings that come from those studies—that are the keys to the time to make that reassessment. This committee should be reasonably able to expect, and we should expect of ourselves, that as the findings come in we should ask where that leaves us on the critical questions? We have been looking at those, both in terms of the present—what is the status of the lakes? How many are now acidic? How many are on the edge of becoming acidic?—concerns about future assaults to those lakes. I think in the research on terrestrial effects—where people first noticed there were problems with trees, there was a jump to the conclusion that sulfur oxides were the cause. Subsequent research suggested that it may not be but again, we've got research in progress on that question; and as those answers become more clear, as piece after piece of that research comes back, it's incumbent on us to reassess it. There is no question that acid rain is an issue that's of concern not only to people in the northeastern part of the country,

but increasingly to people in other parts of the country. What struck me is the way the debate was shaping up several years ago, where it was viewed as one where people primarily in the East were concerned about the effects, and people in the rest of the country would have to pay for it. As that picture changes, where the benefits and costs from it change, I think our ability to craft an appropriate response is also going to change. I certainly would want to commit to you that we want to stay on top of that problem as it evolves and be ready, as those new pieces fall in place, to talk to you.

Senator MITCHELL. Well, that's, obviously, a plausible answer. The problem with it is, Mr. Barnes, that this is the fifth consecutive year in which almost exactly the same answer has been given—"We have more studies coming, we're going to look at the problem"—and my question is, are you able to give us any identification of a study or a series of studies that will provide sufficient data to act and some timeframe within which that will occur?

Mr. BARNES. If I might, Senator Mitchell, may I provide that for the record? I know that Administrator Thomas had asked, following our appropriation hearings, for us to put together a clear schedule of what those research pieces were, what questions were being addressed in them, and what things we expected to result. And I think that from that, hopefully, we should be able to give you a more precise answer on that question. (See p. 69.)

Senator MITCHELL. Well, I sure hope so.

Thank you very much.

Senator STAFFORD. Thank you, Senator Mitchell.

Mr. Barnes, I understand that the Agency is making available whatever research data you get on a timely basis to the staff of this committee, and I hope that will continue.

Mr. BARNES. I would certainly want to make that commitment, Mr. Chairman. Your interest and that of Senator Mitchell and some of the others on this issue is well known to us.

Senator STAFFORD. I'll just comment that, having once served as the Governor of my State, I was well aware that if there was something that I was asked to do that I didn't really want to do, but didn't want to be in the opposition column, I had a committee appointed and directed them to study the problem for another year. So I've always been a little cynical about more studies. Since all three of us are lawyers—Senator Mitchell, you, and I—I've been guided by the evidence in front of this committee over the last 5 years that when the case has been made beyond a reasonable doubt, which is the highest test in our judicial system, that it's time to act. And it seems to me that the case for action in front of this committee, on the evidence, has been proven beyond a reasonable doubt for at least 3 years, and so I think Senator Mitchell and I and others are getting impatient that we move beyond the study phase and take some action to begin to clean this problem up.

I think there are no more questions, and we thank you very much for being with us this morning.

Senator MITCHELL. We look forward to working with you.

Senator STAFFORD. I should ask you two boiler-plate questions.

Do you have in any interests you know of or connections you know of that might put you in a conflict of interest with your duties as Assistant to the Administrator?

Mr. BARNES. No, I do not, Mr. Chairman, other than I have, as I indicated to the staff, excused myself from certain matters, and certain interests that I have in some tax free bond funds have been waived by the general counsel.

Senator STAFFORD. Are you prepared at the request of any committee of the Congress to appear in front of it as a witness?

Mr. BARNES. I am, Mr. Chairman.

Senator STAFFORD. And there will be, possibly, some written questions from other members. If you'd be willing to answer them as expeditiously as possible, it will help us in reaching a decision on your confirmation.

Mr. BARNES. I certainly will be happy to do so.

Senator STAFFORD. All right. Thank you very much.

Mr. BARNES. Thank you very much.

[Whereupon the committee adjourned to reconvene at the call of the Chair.]

[Mr. Barnes' statement submitted for the record, a committee questionnaire completed by Mr. Barnes, and responses to additional questions follow:]

STATEMENT
OF
A. JAMES BARNES
FOR CONFIRMATION
AS DEPUTY ADMINISTRATOR
OF THE
U.S. ENVIRONMENTAL PROTECTION AGENCY
BEFORE THE
U.S. SENATE COMMITTEE
ON ENVIRONMENT AND PUBLIC WORKS
APRIL 17, 1985

Mr. Chairman and Members of the Committee. Fifteen years ago, as an aide to Bill Ruckelshaus, I had the opportunity to to help establish the Environmental Protection Agency. Today, I am honored to come before this Committee as the nominee of President Reagan for Deputy Administrator of EPA, and to reaffirm my commitment to this Agency and to the protection of human health and the environment.

I would like to briefly outline my professional experience, identify some of the many issues that I believe will challenge EPA in the coming months, and then describe how I view the role of the Agency's Deputy Administrator.

EXPERIENCE

My experience includes positions in three federal agencies, two major universities, and the private practice of law. Following graduation from Michigan State University in 1964 and Harvard Law School in 1967, I was an Assistant Professor in the Graduate School of Business at Indiana University, teaching and becoming a co-author of a leading business law textbook.

In 1969 I began my federal government career as a trial attorney and special assistant in the Civil Division of the Department of Justice. When Bill Ruckelshaus was nominated as the first Administrator of EPA late in 1970, I moved to EPA, serving first as a Special Assistant and subsequently as Assistant to the Administrator and Chief of Staff. In the summer of 1973 I became Assistant to the Deputy Attorney General, with responsibility for various budget, planning and administrative activities in the Department of Justice. In 1974, I managed the successful re-election campaign of Governor William Milliken in my home state of Michigan.

From 1975 to early 1981, I was engaged in the private practice of law in Washington, where my practice centered primarily on environmental and commercial law and litigation. During that time I also taught courses in the social responsibility of business and business law as an adjunct professor at the Georgetown University School of Business Administration.

In early 1981, I was nominated by the President, and confirmed by the Senate, as General Counsel for the U.S. Department of Agriculture. In mid-1983, I returned to EPA at the request of Bill Ruckelshaus as Acting General Counsel. After being nominated by President Reagan, I appeared before you in October 1983, and based on this Committee's recommendation was confirmed as EPA's General Counsel.

ISSUES FACING EPA

I believe that my service at EPA for two periods of time (1970-1973 and 1983-present), separated by a decade, gives me a unique perspective on the Agency. Some observations that come from that perspective offer hope, some show that renewed dedication to solve problems is critical, and some illustrate the changed focus of EPA's work.

When EPA was established in 1970, there were many signs the environment was in some jeopardy: reputable scientists warned us that Lake Erie was dying, the Cuyahoga River in Cleveland caught fire, air pollution was a serious problem in many cities, and the survival of our national bird was imperiled by DDT. And our arsenal of statutory authority to address these problems was limited.

Coming back to EPA in 1983, I could not help but be impressed by the dramatic improvement the country had made in controlling conventional pollutants. Lake Erie was alive and well; people could again swim and fish in it and many other bodies of water. Air quality had increased despite significant growth in the economy, and with the ban of DDT, the prognosis for the Bald Eagle was much improved. To be sure, we have more to do to control conventional pollutants, but our progress can give us hope that we can deal successfully with some of the other problems we face today.

When I came back to EPA, I also saw some more disquieting things. In 1970 we had expressed the idea that pulling together in one agency the responsibility for air and water pollution control and regulation of land disposal would result in the ability of the government to take a holistic approach to environmental problems. However, to a large degree EPA simply continued running a series of programs, each aimed at addressing different media. While some progress has been made in including cross-media considerations in EPA's decisions, a clear priority is to do a much better job of integrating such considerations into the Agency's decision process. We cannot simply move pollution around from one media to another. We must seek the best way to reduce the risk it poses to human health and the environment.

Another observation that was striking to me was the prominence of toxic issues in all of EPA's programs. Scientific research has indicated risks posed by exposure to various substances; with more sophisticated detection equipment we're able to detect these substances in smaller quantities, and as we do more monitoring, we find these substances with increasing frequency in the world around us. Addressing these risks in a consistent, rational, effective manner is another critical challenge. We need to build on the work Bill Ruckelshaus did to establish sound risk assessment/risk management principles into the Agency's work and to engage in an active public discussion of these issues.

The need for effective management was, and remains, a critical issue. As a General Counsel at both USDA and EPA, I spent considerable time on managing, selecting, developing and training those agencies' most essential resources--its people.

The management challenges facing the agency, and the Deputy Administrator in particular, are significantly greater than those of a general counsel, but the guiding principles of good management remain the same. Every EPA manager must be committed in the years ahead to developing and enhancing the maximum potential of each individual--scientist, clerk, analyst, secretary or lawyer--who makes up EPA. In turn, their collective talents must be effectively utilized to address the considerable mandate to protect health and environment that you have given us.

THE ROLE OF THE DEPUTY ADMINISTRATOR

The role performed by a Deputy Administrator is, of course, largely determined by the Administrator and the relationship of each Administrator and Deputy is unique to them. Lee Thomas and I worked well together when he was an Assistant Administrator and I was the General Counsel, and I have the honor of being his choice to be Deputy Administrator. I have every expectation that the comfortable working relationship we have established to date while I have been Acting Deputy Administrator will continue.

Lee has asked that, if I am confirmed, I continue the role Al Alm exercised in overseeing the budget and major management systems and conducting many of the major options selection meetings.

In his confirmation statement Lee Thomas set forth six goals he has for the Agency. I share his commitment to those goals. If confirmed as Deputy Administrator, I will join with Lee to work to do the best possible job with the statutes you give us, to ensure strong enforcement in agency programs, and to work to develop reliable scientific and technical foundations on which to base our decisions. Finally, I will strive to make EPA a better place to work and to share with you and the people of this nation what we, 13,000 EPA employees, are doing to protect the environment and the public health of this nation.

I will be happy to answer any questions you may have.

UNITED STATES SENATE

COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS

STATEMENT FOR COMPLETION BY PRESIDENTIAL NOMINEES

Name: Barnes (Last) A. James (First) (Other)

Position to which nominated: Deputy Administrator

Date of Nomination: 3-20-85

Date of birth: 30 (Day) 8 (Month) 42 (Year) Place of birth: Napoleon, Ohio

Marital status: Married Full name of spouse: Sarah Jane Hughes

Name and ages of children: Morey Elizabeth (6 years)

Laura Lehardy (3 years)

Catherine Farrell (6 weeks)

Education:

Institution	Dates attended	Degrees received	Dates of degrees
Michigan State U.	1960-64	A.B.	1964
Harvard Law School	1964-67	J.D.	1967

Employment record: List below all positions held since college, including the title and description of job, name of employer, location, and dates. If you were terminated involuntarily from any position(s), please note the circumstances.

1985-Pres.	U.S. EPA	Wash., DC	Acting Dep. Admin.
1983-1985	U.S. EPA	Wash., DC	General Counsel
1981-1983	U.S. Dept. of Agric.	Wash., DC	General Counsel
1977-1980	Georgetown U. School of Business Admin.	Wash., DC	Adjunct Professor
1975-1981	Beveridge & Diamond	Wash., DC	Law Firm
1974	Milliken for Michigan	Gov's Ofc. Lansing, MI	Campaign Mgmt.
1974	John D. Rockefeller III Fund	L'Enfant Plaza Wash., DC	Consultant
1973	U.S. Dept. of Justice	Wash., DC	Ass't to Dep. A.G.
1970-1973	U.S. EPA	Wash., DC	Ass't to Administra

Employment record--Continued

1969-1970	U.S. Dept. of Justice Civil Division	Wash., DC	Attorney
1967-1969	Indiana University Part Time Employment	Bloomington, IN	Ass't Professor
1966-1967	Harvard Law School (Alumni Records Ofc.)	Cambridge, MA	Research Ass't Clerk
Summer '66	Dewey Ballantine Bushby Palmer & Wood	40 Wall Street New York, NY	Law Clerk

(Continued on attached sheet)

Military service: Enter all military service if not included above: service, dates, rank, type of discharge.

None

Honors and awards: List below significant scholarships, fellowships honorary degrees, military medals, honorary society memberships, and any other special recognitions for outstanding service or achievement.

Recipient of distinguished teaching award given by Class of 1969, Indiana University.

Outstanding Senior Man--Class of 1964, Michigan State U.

Memberships: List below significant memberships and offices held in professional, fraternal, business, scholarly, civic, charitable and other organizations.

Organization	Office held (if any)	Dates
Bar Memberships		
Indiana		1967
District of Columbia		1975
Cosmos Club-Washington, DC		

2A

United States Senate
Committee on Environment and Public Works
Statement for Completion by Presidential Nominees

A. James Barnes

Employment Record--Continued:

Summer '65	Citizens Bank	Flint, MI	Trust Dept. Clerk
Summer '64	Grand Blanc Iron Works	Grand Blanc, MI	Laborer
1963-1964	Michigan State U. So. Campus Grill	East Lansing, MI	Busboy

Published writings: List the titles, publishers and dates of any books, articles, or reports you have written. (Please list first any publications that involve environmental or related matters.)

Law for Business, Donnell, Barnes and Metzger; published by Richard D. Irwin (1st Edition 1980) (2nd Edition 1983).

Business Law and the Regulatory Environment, Lusk, Hewitt, Donnell and Barnes, published by Richard D. Irwin Company (5th Edition 1982).

Business Law: Principles and Cases, Lusk, Hewitt, Donnell and Barnes, published by Richard D. Irwin Company (2nd U.C.C. Edition 1970) (3rd U.C.C. Edition 1974) (4th U.C.C. Edition 1978).

Programmed Learning Aid for Business Law, A. James Barnes; published by Learning Systems Company (1970) (1978).

Qualifications: State fully your qualifications to serve in the position to which you have been named. (attach sheet)

Future employment relationships

1. Indicate whether you will sever all connections with your present employer, business firm, association or organization if you confirmed by the Senate.

N/A -- currently a Presidential appointee as EPA General Counsel.

2. As far as can be foreseen, state whether you have any plans after completing government service to resume employment, affiliation or practice with your current or any previous employer, business firm, association or organization.

No such plans.

3. Has anybody made you a commitment to a job after you leave government?

No.

4. (a) If you have been appointed for a fixed term, do you expect to serve the full term?

N/A.

(b) If you have been appointed for an indefinite term, do you have any known limitations on your willingness or ability to serve for the foreseeable future?

No.

(c) If you have previously held any Schedule C or other appointive position in the Executive branch, irrespective of whether the position required Congressional confirmation, please state the circumstances of your departure and its timing.

General Counsel - EPA - Have been appointed as Deputy Administrator.

General Counsel - USDA - Was asked to become EPA General Counsel

(Continued on attached sheet)

4A

United States Senate
Committee on Environment and Public Works
Statement for Completion by Presidential Nominees

A. James Barnes

Future employment relationships
3(c) ...please state the circumstances of your departure and its timing.

I left my previous Schedule C positions at EPA and the Department of Justice when the person for whom I worked, Bill Ruckelshaus, left.

QUALIFICATIONS TO BE DEPUTY ADMINISTRATOR

I have already had rather considerable experience at EPA, having served as Special Assistant and later Chief of Staff to the first Administrator, Bill Ruckelshaus, from 1970 to 1973, as General Counsel from 1983 to 1985, and as the Acting Deputy Administrator from January 7, 1985 to the present. I have had other related governmental experience as General Counsel of the U.S. Department of Agriculture from 1981 to 1983 and in two positions at the Department of Justice during 1969 to 1970 and 1973. I have practiced some environmental law for six years as an attorney in a Washington, D.C. law firm that specialized in environmental law. I believe that this experience, together with that in teaching positions at two major universities, and an already established good working relationship with the new Administrator, Lee Thomas, provides me with the ability and insight to effectively deal with the substantive and managerial challenges faced by the Deputy Administrator of EPA.

Financial Statement:

1. Attach a copy of your Executive Personnel Financial Disclosure Report (SF 278).

2. List sources, amounts and dates of all anticipated receipts from deferred income arrangements, stock options, uncompleted contracts and other future benefits which you expect to derive from previous business relationships, professional services and firm memberships or from former employers, clients, and customers. Amounts should be indicated by the categories established for reporting income on Form SF 278, Schedule A.

Only such interest is a small stock interest in Nomadic Structures, Inc., a small manufacturer of displays I helped establish while in private law practice.

3. Are any assets pledged? (Add schedule).

Yes - See S.F. 278

4. Are you currently a party to any legal action?

Yes - A lawsuit filed in Florida to collect rent from former tenants in commercial real estate I formerly owned.

5. Have you filed a Federal income tax return for each of the last 10 years? If not, please explain the circumstances.

Yes.

6. Has the Internal Revenue Service ever audited your Federal tax return? If so, what resulted from the audit?

Not to my knowledge.

Potential conflicts of interest:

1. Describe any financial or deferred compensation agreements or other continuing dealings with business associates, clients or customers who will be affected by policies which you will influence in the position to which you have been nominated.

None.

2. List any investments, obligations, liabilities, or other relationships which might involve potential conflicts of interest, or the appearance of conflicts of interest, with the position to which you have been nominated.

None - I have been given a waiver for my ownership of tax-free bond funds (see attached memo).

3. Describe any business relationship, dealing or financial transaction (other than taxpaying) which you have had during the last 10 years with the Federal Government, whether for yourself or relatives, on behalf of a client, or acting as an agent, that might in any way constitute or result in a possible conflict of interest, or an appearance of conflict of interest, with the position to which you have been nominated.

In private law practice (1975-1981) I represented several clients with matters at EPA.

4. Explain how you will resolve any potential conflict of interest, or appearance of a conflict of interest, that may be disclosed by your responses to the above items.

I have recused myself from all such matters (see attached memo).

5. Explain how you will comply with conflict of interest laws and regulations applicable to the position for which you have been nominated. Attach a statement from the appropriate agency official indicating what those laws and regulations are and how you will comply with them. For this purpose, you may utilize a statement by the relevant agency Ethics Officer.

EPA officials are subject to the same statutes and regulations regarding conflict of interest which apply throughout the government. These provisions are summarized and discussed in the attached EPA publication entitled "Guidance on Ethics and Conflicts of Interest." Essentially, the statutory provision at 18 U.S.C. Sec. 208 provides that officials may not participate in "particular matters" which affect their financial interests, and Agency regulations prohibit actions which create the "appearance of impropriety."

As my financial report indicates, my financial interests include widely diversified tax exempt bond funds. EPA matters may involve or affect the financial interests of the state and local governmental entities whose bonds are held by these funds. However, under 18 U.S.C. Sec. 208(b)(1) and EPA regulations, the EPA Ethics Official may waive the prohibition of 18 U.S.C. Sec. 208(a) where the interest "is not so substantial as to be deemed likely to affect the integrity of the services which the Government may expect." Since tax-exempt bond funds are analogous to the diversified mutual funds which are automatically exempt from the prohibition under EPA regulations, the EPA Ethics Official provided such a waiver by memorandum dated March 29, 1985. A copy of this waiver is attached.

In addition, I do not think it would be proper for me to participate in EPA decisions involving matters in which I participated as private counsel during the time I was a partner in the law firm of Beveridge and Diamond, or closely related matters. Accordingly, I have informed my staff that I will not participate in such matters. A copy of my recusal statement is attached. It lists the entities for which I provided legal services, and I have directed my staff to notify me whenever any EPA matter is brought to my attention which involves any of these entities.

A copy of my Standard Form 278, Executive Personnel Financial Disclosure Report, and a copy of a letter approving the report from the EPA Ethics Official to the Office of Government Ethics is also attached.

Additional Matters:

1. If there is any additional information which you believe may be pertinent to the Members of the Committee in reaching their decisions, you may include that here.

2. Do you agree to appear before all Congressional Committees which seek your testimony? Yes.

3. Having completed this form, are there any additional questions which you believe the Committee should ask of future nominees?

AFFIDAVIT

) ss

, being duly sworn, hereby states that he/she has read and signed the foregoing Statement for Completion by Presidential Nominees including the Financial Statement and that the information provided therein is, to the best of his/her knowledge and belief, current, accurate, and complete.

C. James Barna

Subscribe and sworn before me this 12 day of April , 1985

Mary V. Borgen
Notary Public

My Commission Expires October 14, 1988

Senator Stafford

Question 1

Can you suggest how EPA might make enough information about public process public, so as to allay concerns of myself and others that decisions affecting millions of people are being made behind closed doors? More specifically, will you agree to submit proposals to maximize Congressional and public access to the decision-making process required by the Executive Order?

Answer 1

EPA currently places all written communications that pertain to a rulemaking, including those coming from OMB, in the public docket. This provides for unencumbered, detailed Congressional review and public access to all documents upon which EPA relies when making its decisions.

With respect to oral communications, factual information or argument relevant to the substance of the rulemaking that is not already in the public docket and that appears likely to substantially influence or provide a basis for the final rule must be reduced to written form by EPA and similarly placed in the public docket. This existing policy applies to all external communications, including those with OMB.

As you requested, I am actively engaged in discussions with Lee Thomas and other Agency officials concerning more specific guidelines relating to external communications that might affect the Agency's regulatory process. This includes actions the Agency undertakes pursuant to Executive Order 12498. While we have not yet arrived at a final Agency position on this issue, it is a high priority with the Administrator and me. We plan to come forward with a proposal that permits Congress and the public an informed view of all phases of the Agency's decision-making process, including significant contacts with OMB.

Senator Simpson

Question 1

Does EPA or the Department of Justice have an apportionment model, of any type, either designed for or in use in Superfund cases? Is one planned for the future? Has any such model been used in the past? If the answer to any of the questions is "yes", please describe the model.

Answer 1

My understanding is that neither EPA nor DOJ has an apportionment model of any type designed for or in use in CERCLA cases. No such model was used in the past and no such model is planned for the future.

EPA does have a model designed to indicate when settlement with potentially responsible parties, rather than litigation, is appropriate. This model considers such factors as the time value of money, the strength of the evidence tracing wastes to particular parties, the ability of parties to pay, public interest considerations and precedential value. However, the settlement model is not capable of apportioning costs among potentially responsible parties.

A study of apportionment methods is currently being conducted. The study will examine methods used by responsible parties to allocate costs among themselves. The study is not designed to result in an apportionment model.

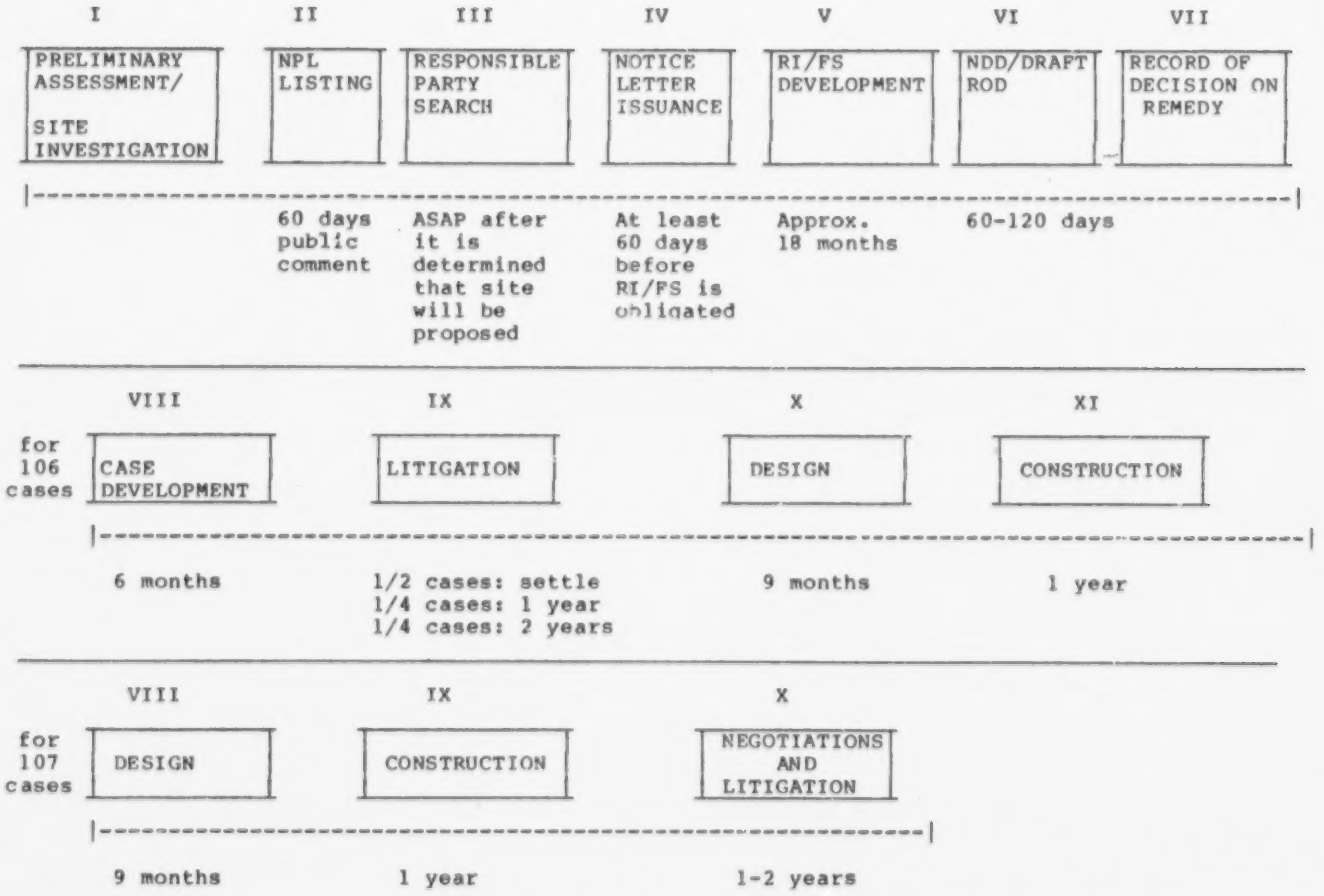
Senator Simpson

Question 2

In Lee Thomas' recent answers to a series of questions from me, the EPA supplied examples from specific cases to illustrate the amount of time required to litigate to judgment and actual recovery in cost recovery Superfund cases (Question 4). However, the Agency answers did not utilize the milestones suggested, and they did not use any general data. Instead, they used several specific examples, as illustrative without such background data. Please add such information now, using the suggested group of milestones in the question 4 previously submitted.

Answer 2

The following chart illustrates in a general way the amounts of time involved in the various milestones of CERCLA Section 106 and 107 enforcement cases, and indicates the usual starting points for cost recovery litigation. Although Question 4 asks about cost recovery cases, some of the milestones it includes relate most closely to Section 106 abatement cases, rather than to Section 107 cost recovery cases. At this time, we have relatively little experience with Section 107 cost recovery cases.


I
II
III
IV
V
VI
VII
PRELIMINARY ASSESSMENT/ SITE INVESTIGATION
NPL LISTING
RESPONSIBLE PARTY SEARCH
NOTICE LETTER ISSUANCE
RI/FS DEVELOPMENT
NDD/DRAFT ROD
RECORD OF DECISION ON REMEDY
60 days public comment
ASAP after it is determined that site will be proposed
At least 60 days before RI/FS is obligated
Approx. 18 months
60-120 days
VIII
IX
X
XI
for 106 cases
CASE DEVELOPMENT
LITIGATION
DESIGN
CONSTRUCTION
6 months
1/2 cases: settle
1/4 cases: 1 year
1/4 cases: 2 years
9 months
1 year
VIII
IX
X
for 107 cases
DESIGN
CONSTRUCTION
NEGOTIATIONS AND LITIGATION
9 months
1 year
1-2 years

Senator Simpson

Question 3

In the previous Question 9, the EPA was asked to state what it believes to be an "acceptable level" of transaction costs in the Superfund context. The Agency did not answer the question. Please answer that question now, focusing on private sector transaction costs.

Answer 3

Given the other resource needs of the Agency and the nation, we believe that the only "acceptable level" of transaction costs is the lowest possible level of such costs. The Agency continually strives to lower its costs through program streamlining. Transaction costs in the early days of the program were higher because of uncertainties about some of the basic principles of law that might pertain. The gradual emergence of a well developed body of case law is reducing those uncertainties.

The Agency also hopes to minimize private sector transaction costs by encouraging potentially responsible parties to participate in every possible step of the process. The following chart indicates the opportunities available for potentially responsible parties to participate in the remedy selection process. It is hoped that such participation may minimize the controversy that can result in high transaction costs.

In addition, organizations like Clean Sites, Inc. are working to get potentially responsible parties together and to facilitate their assumption of cleanup responsibility. We hope that this approach can go a long way toward reducing the high private parties' transaction costs that would flow from their litigating, or preparing to litigate, the scope of the remedy and their own liability for the cost of that remedy.

RESPONSIBLE PARTY OPPORTUNITIES FOR INVOLVEMENT IN THE CHOICE OF REMEDY

I	II	III	IV	V	VI	VII
PRELIMINARY ASSESSMENT/ SITE INVESTIGATION	NPL LISTING	RESPONSIBLE PARTY SEARCH	NOTICE LETTER ISSUANCE	RI/FS DEVELOPMENT	NDD/DRAFT ROD	RECORD OF DECISION ON REMEDY
	60 days public comment	ASAP after it is determined that site will be proposed	At least 60 days before RI/FS is obligated	Approx. 18 months	60-120 days	

II. PRPs have an opportunity to comment on proposed NPL listing.

IV. Notice letters are issued to PRPs, indicating possible involvement with sites, and offering PRPs the opportunity to conduct the RI/FS, subject to conditions set by EPA.

V. PRPs also have an opportunity to participate in development of RI/FS by the Agency. Proposed amendment to allow section 104 orders would facilitate PRP RI/FS.

VI. PRPs have an opportunity to discuss proposed remedy with Agency, and to comment on proposed ROD.

VII. PRPs have an opportunity to conduct the cleanup after the decision on the remedy.

Senator Symms

Question 1

Recent court rulings require the Bureau of Land Management to prepare Environmental Impact Statements including "worst case" scenarios and conduct tests before they can use herbicides already registered as safe by EPA. This contributes to duplication and delay in needed weed control work. What can EPA do in the registration process or otherwise to expedite the approved use of herbicides on government lands?

Answer 1

The court cases in question primarily involve the requirements of the National Environmental Policy Act (NEPA). In general terms, courts have ruled that registration of pesticide products by EPA does not relieve other agencies from NEPA requirements to assess the potential health or environmental impact of specific projects. A complicating factor is that the data supporting registration of some of the pesticides involved in these cases is inadequate to conduct thorough risk assessments.

There are three things EPA is doing that help to address this situation. First, the Agency's reregistration program staff is actively reviewing the data supporting existing registrations, identifying missing or inadequate data, and requiring pesticide registrants to provide needed up-to-date data adequate to evaluate potential risks.

Second, EPA is actively sharing data or evaluations of data with other Federal agencies, to the extent consistent with the legal requirements for protecting the confidentiality of some pesticide data submitted to support registrations. We are also reevaluating the current confidentiality requirements to see whether more extensive and timely sharing of pesticide data can be achieved. EPA is assisting other Federal agencies' approved use of herbicides on Federal government lands by helping these agencies acquire (within the constraints imposed by FIFRA) all of the currently available registration data (human health effects, wildlife effects, chemical product qualities, etc.). These data may then be used by these other agencies to prepare the risk analyses needed in their environmental impact statements (EIS's), including the "worst case" type of analyses required by recent NEPA case law.

Third, after these EIS's are prepared, they are reviewed by EPA for their technical adequacy and their projects' potential impacts on humans and the environment under NEPA and section 309 of the Clean Air Act. This provides opportunity for EPA to evaluate the adequacy of the scientific basis of the preparing agency's risk assessment or worst case analysis.

EPA is currently providing extensive assistance in the above manner to the Forest Service, the Animal and Plant Health Inspection Service and the Drug Enforcement Administration.

Senator Symms

Question 2

Risk assessment is a process by which we determine whether or not a threat to health exists, and the extent or prevalence of that threat. In EPA's current risk assessment process, large tolerances and worst case scenarios are used with the justification that it is better to over-estimate a risk. Doesn't this policy assume significant risk even before the assessment is concluded? Would it not be wiser to assess risk based on the most sound scientific probabilities and principles, and leave the tolerances and margins of safety to the risk management phase?

Answer 2

In performing risk assessments, EPA uses the best available scientific information, follows generally accepted inference guidelines, and seeks the widest scientific advice and peer review. Where there is uncertainty as to choice of assumptions, the Agency does not make "worst case" assumptions, but rather chooses the most plausible approach based on available science with due concern for public health protection.

When performing risk assessments on chemicals exhibiting thresholds, uncertainty factors may be applied depending on the type of experimental evidence, but these factors are in turn based on scientific evidence and accepted practice. Once the risk assessment phase is completed, each program office establishes tolerances, margins of safety, and the like--consistent with each office's enabling legislation; however, establishment of those kinds of factors is understood to be, and explicitly identified as, risk management.

Consistent with its effort to assure that its risk assessment procedures are consistent with sound scientific principles, EPA submitted risk assessment guidelines to its Science Advisory Board (SAB). The SAB has just concluded an evaluation of the five proposed risk assessment guidelines which were developed by Agency scientists with extensive discussion and review by expert scientists and the public at large.

Senator Bentsen

Question 1

Former EPA Administrator William Ruckelshaus supported a policy of maintaining an open public record, including maintaining a rulemaking docket of written materials. He also required that "Any oral communication regarding significant factual information or argument affecting a rule ... should be summarized in writing and placed in the rulemaking docket..." What would be your policy regarding written and spoken communications, especially those coming from OMB?

Answer 1

As you have indicated, the current policy at EPA is to place all written communications, including those coming from OMB, that pertain to a rulemaking in the public docket. With respect to oral communications, including those coming from OMB, factual information or argument relevant to the substance of the rulemaking that is not already in the public docket and that appears likely to substantially influence or provide a basis for the final rule must be reduced to written form by EPA and placed in the public docket. I fully support maintaining this EPA policy related to placing oral and written communications in the public docket.

Question 2

As you may be aware, oversight hearings on the issue of ocean incineration are going to be held by this Committee. It is imperative that the Environmental Protection Agency be a major participant in those hearings. Is the Agency fully committed to participate with witnesses and with information?

Answer 2

Yes, the Agency would be pleased to participate in these hearings in the manner you have requested. We believe that decisions concerning ocean incineration should be based on sound factual and scientific information and offer a careful review of the public policy considerations involved--and would be happy to work with the Committee to achieve that end.

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Senator Bentsen

Question 3(a)

Yesterday you appeared at a hearing of the House Energy Committee investigating OMB's role in EPA decisions about asbestos regulations. Apparently Mr. Dingell and members of his subcommittee believed that EPA's decisions about how to best control asbestos exposures have been dictated by OMB. I suspect this Committee will also have some follow-up questions about the situation later. Now, however, can you tell the Committee how you view the proper roles and separation of power between OMB and EPA program offices?

Answer 3(a)

The statutes administered by EPA place the responsibility for making regulatory decisions with the Administrator. It is incumbent on the Agency to do the necessary scientific technical and legal analysis and to formulate the response it believes is the most appropriate in light of the mandate it has from Congress. Where its proposed actions are subject to review by OMB pursuant to the President's general constitutional duty to see that the laws are faithfully executed and his authority to provide direction to his appointees, the EPA Administrator should present and defend his proposed action. He should agree to alter it only where he is convinced that modifications would produce a sounder and preferred response to the statutory mandate in the same manner as he would respond to comments and suggestions from the public or the Congress. The final decision must represent the Administrator's own best judgment and the basis for that decision must be fully set forth in the public record so that it can be reviewed and understood by the public, the Congress or, if challenged, a court.

Question 3(b)

Many EPA decisions are now attempting to use risk assessments. How comfortable do you feel about making decisions based on these new technical analyses?

Answer 3(b)

I believe risk assessments are useful tools that can assist Agency managers in targeting and formulating their regulatory responses to the presence of various substances in our environment. At the same time, it is important to recognize their nature and limitations.

The risk assessments available to EPA are never perfect in their ability to predict the probability of the harmful effects from exposure to particular substances. Often, we find ourselves in the position of having to use risk assessments based on animal data in which only one or two species have been tested. The results sometimes indicate that the risks are sufficiently serious to warrant action before more certain data, including human data, can be acquired. However, for some substances, such as benzene, the Agency has one or more epidemiological studies which give us greater certainty about the risk of human ill-effects. In these cases, we can feel more comfortable with the basis for our regulatory decisions.

Senator Bentsen

Question 4

Regarding asbestos specifically, EPA's management of the regulatory solutions to this problem have been disappointingly uneven at best. As Deputy Administrator, the chief management official of the Agency, how do you hope to get EPA's efforts on track?

Answer 4

On March 8, 1985, I announced a temporary halt on work concerning the asbestos referral and requested the Office of General Counsel to formally address a number of legal questions concerning Section 9 of TSCA.

Pursuant to my March 8 memo, the Agency has been working to identify and resolve these and additional legal and policy issues. This process involves a task force chaired by Assistant Administrator John Moore, with participants from the Office of Pesticides and Toxic Substances, the Office of Policy, Planning and Evaluation, the Office of General Counsel, and a representative from the Administrator's Office. This task force has been identifying and working to resolve the legal and policy issues.

The Office of General Counsel has now completed a more comprehensive draft legal opinion on TSCA Section 9. The task force is reviewing this document and the policy questions that need to be addressed. The Office of Pesticides and Toxic Substances has completed an initial paper that sets forth some of these issues for consideration by the Administrator.

After a thorough analysis and discussion of the issues, the Administrator will make a final decision on the Agency's regulatory position on asbestos. The Administrator has now had two background briefings on asbestos. Thus, we are hopeful that decisions concerning the future regulation of asbestos will be made in the next few weeks.

Senator Bentsen

Question 5

Budget issues currently dominate the news, and earlier there were fears that EPA's budget would be so reduced that the Agency's regulatory presence would be crippled. Fortunately, that didn't happen this year. However, can you assure the Committee that later budgets will be sufficient for EPA to carry out its missions as identified by Congress?

Answer 5

We will continue to work, as Bill Ruckelshaus and Lee Thomas did this year, to assess our budgetary needs and to submit budget requests that we believe are sufficient for the Agency to carry out its Congressionally mandated mission.

Question 5(a)

Can we have your pledge that if budgets or authority that you now have are insufficient that you come back to the Committee and let us know what needs to be changed?

Answer 5(a)

Yes. EPA maintains a continuing program of legislative and budget reviews. If we discover we are unable to resolve, through our own internal processes, resource shortages or insufficient authority to perform our mission, we will make our concerns known to you.

Senator Bentsen

Question 6

Mr. Ruckelshaus was widely quoted as saying that one of his biggest regrets about leaving EPA was that so much environmental legislation has expired, and much work with many statutes remains to be done. Can we expect you and Mr. Thomas to work with Congress to reauthorize these laws, by presenting reasonable Administration proposals?

Answer 6

You can certainly count on us to work with Congress to reauthorize environmental legislation that has expired. We are actively involved in the reauthorization of CERCLA, CWA, SDWA, FIFRA and will be involved in reauthorization of the other statutes that we administer.

Our involvement, of course, may take different forms. As we have done with CERCLA, the Agency and the Administration will sometimes put forth a concrete legislative proposal. In other cases, we may offer the Administration's views or technical assistance. In all cases, we look forward to working with Congress to develop legislation which is effective, reasonable and protective of public health and the environment.

Senator Bentsen

Question 7:

In the past, one of the responsibilities of the Deputy Administrator has been the coordination of various parts of the Agency. This Committee has tried to encourage that coordination, particularly where one Office had resources or information which could be of great use to another Office. The Office of Drinking Water, for example, really should be using the data and information-gathering authorities available through the Office of Toxic Substances, under the Toxic Substances Control Act (TSCA). What did you do to promote coordination between the Office of Drinking Water and the Office of Toxic Substances, and among other Offices?

Answer 7:

The Deputy Administrator does have a critical role in coordinating resources, information and activities that involve more than one office in the agency. In fact, a major current project under my supervision is improving the development and use of risk assessments that are of interest to more than one program office.

With respect to the specific example given, the Office of Drinking Water (ODW) often does make use of information which has been developed by the Office of Toxic Substances (OTS), under the Toxic Substances Control Act, most often Section 4 or Section 8.

For example, ODW, on a number of occasions, has made use of the information provided in the Health Effects Support Documents prepared for use in the Test Rules development process of Section 4. These documents as well as other reports are given to ODW for comment on a regular basis. In cases where testing has been done on chemicals of mutual interest, ODW has requested and been provided the raw data and data summaries when appropriate.

In addition, OTS regularly requests ODW, and other Program Offices as well, to submit lists of potential candidates for testing. At this time, the chemicals of interest to ODW that could be tested using Section 4 of TSCA include molybdenum, nickel, antimony, vanadium, the adipates, the phthalates, hexachlorocyclopentadiene, 2-methyl-2-butanol, gasoline and diesel fuel #2. The data requirements are not identical for each of the compounds listed above.

A problem with using Section 4 to develop data, however, is the time frame from the initial request for the data until the actual data are obtained from the manufacturer. This may take more than five years, depending upon the information required--if all goes smoothly.

Q. 7 (Con't)

ODW also uses data submitted under Section 8. A recent example of this is the acquisition of the data from the two-year drinking water study in rats on acrylamide. Initially developed under a Section 4 testing agreement with a consortium of manufacturers, the results describing a positive carcinogenic effect warranted attention under Section 8. These data are forming the principal basis for the development of the Recommended Maximum Contaminant Level (RMCL) for acrylamide monomer in drinking water.

The Office of Pesticide Programs (OPP) and ODW have a Memorandum of Understanding in effect which describes procedures by which they will mutually develop health effects guidance for unregulated contaminants of drinking water, when those contaminants are registered pesticides. In addition, OPP provides ODW with any available information on registered pesticides that ODW may need in its development of a more formal regulatory strategy (RMCLs and MCLs). Also, if ODW identifies a specific data gap, particularly in the area of toxicology, Section 3 of FIFRA can be used to ask the registrant(s) to generate the data to fill that gap. This has been done for aldicarb, and presently is being done for atrazine and simazine. Dual purposes are accomplished in this manner: OPP acquires data needed to sustain registration of the pesticide and ODW, to support its regulatory decision process.

The Office of Pesticides and Toxic Substances also serves as the contact point for the Agency's Program Offices to request chemical testing with the National Toxicology Program (NTP). For example, NTP has tested or is testing now chloramines, chloroform and bromoform for ODW.

Still another opportunity for cross-office coordination comes through the Research Committee mechanism of the Office of Research and Development (ORD). Data gaps, in toxicology as well as other areas, can be filled by request of the Program Offices to ORD with the studies to be conducted in-house or elsewhere under contractural or granting arrangements. As an example, in recent years ORD has generated toxicological data for ODW on carbon tetrachloride, 1,1-dichloroethane, chloroform and other chemicals. These data have, in turn, been used to develop the regulatory strategies.

Senator Bentsen

Question 8

In the Safe Drinking Water standards-setting program, we continue to hear disturbing reports that additional substances, for which regulation had been planned, have been dropped from active regulatory consideration. Why is this happening? Especially as drinking water standards become important in other environmental programs, such as Superfund cleanups, we must develop standards for many more contaminants. What can you do to prevent this stalling of the program?

Answer 8

Over the past three years, EPA has been working vigorously to develop regulatory strategies for a large number of drinking water contaminants. Nearly 100 chemical or microbiological indicators of drinking water quality are included in this exercise. This effort has been divided up into five Phases.

Phase 1 was described in an ANPRM published in the Federal Register on March 4, 1982. At that time, it was stated that 14 Volatile Organic Chemicals would be subjected to review for the development of a regulatory strategy. On June 12, 1984, Recommended Maximum Contaminant Levels (RMCLS) for nine of these substances were proposed. These included trichloroethylene, tetrachloroethylene, benzene, vinyl chloride, 1,1,1-trichloroethane, 1,2-dichloroethane, 1,1-dichloroethylene, p-dichlorobenzene and carbon tetrachloride. Promulgation of these RMCLS and proposal of their respective MCLs is forthcoming. RMCLs for cis- and trans-1,2-dichloroethylene, chlorobenzene, o- and m-dichlorobenzene, methylene chloride and trichlorobenzene(s) were not proposed at that time. For these chemicals, toxicology evaluations had not been completed at the time of proposal. This was due, in part, to the lack of sufficient numbers of personnel with toxicological expertise to monitor the development and completion of all of the necessary Health Effects criteria documents in the same time frame. In addition, for the trichlorobenzenes, occurrence data were not available due to analytical difficulties in obtaining samples in the Ground Water Supply Survey. The evaluations for the cis- and trans isomers of 1,2-dichloroethylene, chlorobenzene, o- and m-dichlorobenzene have since been completed and RMCLs or Health Advisories (HAs) are included in the Phase II proposal. The trichlorobenzenes and methylene chloride will be considered in Phase V of the Revised Regulations.

Phase II was described in an ANPRM published in the Federal Register, October 5, 1983. At that time, it was stated that about 80 chemicals and microbiological indicators would undergo review in this phase of the Revised Regulations process. RMCLs are under development for most of these substances. Because the ANPR was a

candidate list, it is possible that the Agency may conclude that some of the substances identified in it do not warrant regulation under the terms of the Act. However, at this time, none of the agents listed in the ANPR have been dropped from consideration for regulations development.

As mentioned above, Phase III of the Revised Regulations addresses radionuclides. Four sets of radioactive agents are being considered for regulation. Regulation development is underway with proposal anticipated in late 1985.

Phase IV of the Revised Regulations has begun. The chemicals (8 groups) under evaluation in this phase are all disinfectants or their by-products. Proposal of regulatory strategies on these is projected for FY86.

As mentioned earlier, Phase V consists principally of the evaluation of chemicals not completed in Phases I or II. However, it is possible that additional agents may be included. Completion of this phase is dependent, in part, upon the generation of data from which assessments can be made.

Senator Mitchell

Question 1

An estimated 5000 to 20000 lung cancer deaths per year are attributable to radon. What is the Agency doing about radon?

Answer 1

In the past decade, the Agency has addresed a wide variety of indoor and outdoor radon exposures associated with sources such as uranium mill tailings, land contaminated with wastes from radium processing facilities and lands reclaimed from phosphate mining activities. Most recently, standards were developed for the emission of radon from uranium mines. Agency actions on these types of specific radon exposure problems have allowed us to develop expertise on the more general issue of indoor exposures to radon, primarily from naturally-occurring sources.

The Agency's total efforts on radon are the sum of activities supporting several different objectives. Examples of efforts for existing regulatory programs include surveys of emissions and exposures from sources such as uranium mines and residues from the processing of phosphate ore, assessments of health effects data on radon exposures, development and quality control of instruments for radon measurements, and the evaluation of devices to remove radon decay products from the air.

Technical assistance provided to states at their request has included the following: 1) designing a radon survey for the State of Pennsylvania and assisting them in conducting the survey in the State, 2) providing advice to Florida for the development of a State statute for standards and housing designs to control radon entry into new homes, 3) developing health advisories and action levels for mitigating elevated exposures of radon, 4)providing analysis of geologic factors affecting radon sources, 5) participating in workshops on radon conducted for State officials, and 6) responding to numerous public information requests. A portion of EPA's FY84 and FY85 appropriation was committed to a demonstration of control technology for radon, analysis of factors to indicate the potential of lands to cause elevated indoor radon, and partial funding of a survey of indoor air quality in the State of New York.

In summary, the Agency is maintaining and improving its experience and data base on the general issue of indoor radon while simultaneously addressing particular exposure problems for which the Agency has been given authority. We continue to maintain liaison relationships with the international radiation community to keep abreast of the state-of-the-art and other international developments in the area of radon assessment and control programs. In addition, we communicate frequently on this issue with private sector groups such as utility companies and home developers. These types of activities allow the Agency to maintain a current assessment of progress in this area and contribute to the collective effort of the government, private and academic sectors.

Senator Mitchell

Question 2

Explain the Agency's past actions/proposals on indoor air and radon; describe what has happened to those proposals.

Answer 2

In the late 1970's, the Agency initiated a program for the general characterization and assessment of rador in structures, as well as the development of measurement protocols and mitigation techniques. Projects were proposed and supported to examine ways to reduce exposures from radon associated with industrial activities as well as from naturally-occurring sources. However, in recent years, priority has gone to projects that directly support the Agency's regulatory programs.

EPA has worked on research and development projects related to indoor air and radon. This work has included the development and testing of personal air monitors, on-going work to assess total exposure to air pollutants, both indoor and outdoor, and investigation of mitigation measures in areas where high levels of indoor radon have been found.

However, due to the Agency's many competing program priorities and the necessity for fiscal restraint, the Agency determined that there were higher program priorities. Other pressing Agency needs, combined with the absence of statutory or regulatory authority, influenced the Agency's decision to rank the indoor air initiative as a lower priority. Therefore, no budget resources were requested as part of the President's FY86 budget.

EPA's Office of Air and Radiation (OAR) FY86 internal budget request included an initiative to reduce indoor air pollutants. However, the initiative was not submitted as part of the Agency's FY86 request to OMB. The purpose of this initiative was two fold: $750,000 was requested for a national assessment of health-related impacts of radon and for the evaluation and development of control technologies and improved construction practices. Also, $300,000 was requested to identify areas of high risk in this and other pollutant areas, and to initiate non-regulatory methods (information, education, technical support etc.) for reducing risk. A clearing house for State and local governments was also included in this initiative.

Similarly EPA's Office of Research and Development (ORD) requested $2.1 million and 2 FTE's to implement its indoor air initiative. The purpose of ORD's initiative was to characterize national indoor air quality, determine the health effects of indoor air pollutants, identify the sources of indoor air pollutants and evaluate mitigating techniques for these pollutants. This request was not incorporated as part of the President's FY86 budget.

Senator Mitchell

Question 3

Provide a copy of the most recent Agency recommendation (program and/or budget) on indoor air and radon.

Answer 3

1986 Internal Proposed Budget Request for Radon and Indoor Air Initiatives

	OAR	ORD	TOTAL
FTE	17.0	2.0	19.0
Extramural $	$1,050.0	$2,100.0	$3150.0

The Agency did not include the proposed OAR program and funding initiatives because of other higher priorities within the Agency.

1986 Official Agency Budget Request for Radon and Indoor Air Initiatives

	ORD	TOTAL
FTE	2.0	2.0
Extramural $	$2,100.0	$2,100.0

The President's budget did not include the proposed ORD funding because of the need for fiscal restraint and the need to fund statutorily mandated activities.

A copy of the latest Agency draft plan on radon is included as Attachment A. The Office of Radiation Programs is planning to meet with the Administrator and me within the next few weeks to discuss this proposal.

ATTACHMENT A

INDOOR RADON - BRIEFING PAPER

April 26, 1985

What is radon?

Radon is a chemically inert, radioactive gas. It is produced by the decay of radium-226, which naturally occurs in soil and rock. When radon decays it produce other radioactive elements which adhere to dust in air inside structures and are trapped in lungs when inhaled.

What are sources of radon?

Radium in soil and rock is the major source. Radon flows through soil and enters homes through cracks or openings in foundation floors or walls. Accumulation depends on ventilation and removal rates. High indoor levels have been found in many states in the U.S. due to natural soil or ground contaminated by radium containing wastes. Other sources include ground water and building materials.

What are the health risks from radon?

Lung cancer is the health hazard of concern from exposure to radon decay products. Increased incidence of lung cancer has been observed in uranium, iron, feldspar, and other underground mines in many countries. These miners have been studied extensively. This data provides the information to quantitatively estimate human health risk from exposure to radon. Although most environmental exposures to radon are less than the levels experienced by miners, a number of environmental situtations have been observed that are at levels where miners experienced increased cancer deaths. Although scientist disagree on the exact unit risk value (# of deather per unit exposure) for exposure to radon decay products, there is only a factor of about 5 between the lowest and highest unit risk values recommended by various scientific groups. Consequently, there is good general agreement on the hazard from exposure to radon decay products.

Outdoor radon decay product levels present risks of about 2 in 10,000 to 4 in 1000 lifetime risk. The distribution of indoor levels is not well characterized in the U.S. (many other countries have completed or are conducting national surveys). Based on limited available U.S. data, perhaps a million homes exceed a 3-4 in 100 lifetime risk. Homes in Pennsylvania have been observed with levels that would present lifetime risks of about 70-90 chances in 100 of fatal lung cancer. The estimates of the total population risk vary among scientists however, the general consensus is that thousands of lung cancer deaths per year are related to exposure to radon decay products.

What information is needed to evaluate and resolve the problem?

To facilitate dealing with the problem we have divided it in several elements which are described below.

o Distribution of levels: We need to be able to focus efforts on reducing levels on those areas of the country and structure characteristics that present the greatest risk. At present we cannot identify those high risk situations. A national survey would enable EPA to find the areas of greatest health concern and establish the magnitude of the health risk on a U.S. wide basis.

o Measurement techniques: Lower cost, simple measurement techniques are needed so that state and local government can play a greater role in assessing of their areas and so individual home owners and builders can evaluate their own structures.

o Remedial and preventation measures: Very inexpensive passive (no power requirements) and active measures need to be developed and demonstrated in a variety of soil and structure characteristics.

o Factors which influence levels: We need a better technical understanding of how the various types of sources, transport mechanisms, construction practices, ventilation methods, climate factors, and human activities interact to influence radon levels. This will help us design better and less expensive remedial and preventative measures.

To achieve these information needs we have designed a five year program. The program would also enable EPA to prepare recommendations and guidelines for use by Federal, State, and local officials as well as the construction industry and homeowners. A summary of the most recent revision of a five year program follows and the entire program is attached.

YEAR 1 — 14 FTE — $1,000,000 Extramural Funds

- Complete pilot study of national assessment procedures
- Complete design of data handling system for national assessment
- Start evaluation of mitigation technologies
- Start evaluation of construction practices
- Complete design of national assessment

YEAR 2 — 23 FTE — $1,675,000 Extramural Funds

- Start national assessment
- Continue evaluation of mitigation technologies
- Continue evaluation of construction practices
- Start evaluation of energy conservation methods and their effects of radon levels in structures

YEAR 3 — 20 FTE — $1,400,000 Extramural Funds

- Complete measurement component of national assessment
- Start source characterization of areas with elevated levels
- Start statistical analyses of data, including defining the national distribution
- Continue evaluation of mitigation technologies
- Continue evaluation of construction practices
- Continue evaluation of energy conservation methods

YEAR 4 — 15 FTE — $700,000 Extramural Funds

- Start development of Agency guidance and recommendations
- Complete report on mitigation technologies
- Complete report on construction practices
- Complete report on energy conservation methods
- Start development of implementation handbook
- Continue characterization of areas with elevated levels
- Complete national assessment

YEAR 5 — 12 FTE — $500,000 Extramural Funds

- Issue Agency guidance and recommendations
- Complete implementation handbook
- Complete report on source characterization work
- Provide technical assistance

U.S. ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF RADIATION PROGRAMS

DRAFT

RADON ASSESSMENT AND MITIGATION PROGRAM

Summary

Radon, a naturally-occurring radioactive gas, is generally recognized as a key pollutant in the indoor environment. Experts estimate that exposure to radon and its short-lived decay products inside buildings (henceforth we will denote both by the term "radon") result in 5,000-20,000 lung cancer deaths each year in the United States alone. The recent trend towards energy conservation will exacerbate this problem. A coordinated national program is proposed to assess the distribution of exposure levels in buildings and to evaluate preventive measures and techniques that can be readily adopted to mitigate this health hazard.

Description of the Problem

Much of the radioactivity in the natural environment is due to the decay of the primordial isotope, uranium-238, which has a half-life of well over a billion years. Uranium-238, through a series of steps, decays to radium-226. All substances of natural origin contain radium in some concentration. On the average, ordinary soils and rocks contain about 0.5 picocurie (pCi) of radium-226 per gram of material.

Radium-226, which has a half-life of 1600 years, decays to radon-222, an inert gas with a half-life of 3.8 days. Radon-222 and two of its immediate decay products, polonium-218 and polonium-214, are alpha particle emitters. Alpha particles are heavy charged particles which are more dangerous to health than other types of radiation, such as x-rays or gamma rays. The carcinogenicity of alpha-emitters is well-established.

While the concentration of radon in the outside environment does not usually pose a significant health hazard, the situation indoors is different. Radon will concentrate in indoor environments because of the limited exchange rate between indoor and outdoor air (typically one air change or less per hour in existing structures). The rate of entry of radon into a structure and the air exchange rate influence the radon concentration inside the structure. The trend towards sealing buildings in the interest of energy conservation will aggravate the current situation. The relationship between the level of radon inside a structure is inversely proportional to the structure's ventilation rate. For example, a decrease of only 50 percent in the ventilation rate of the average house can result in a doubling of the indoor radon levels.

In many cases, the most significant pathway of radon entry into a structure is radon migration from soil into basements through cracks and penetration points in slabs for utilities. The amount of radon transferred from the soil into a structure is affected by many factors, including radium content and porosity of the soil, construction type, meteorological conditions, etc. The variability of the factors affecting this source of

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radon contributes to the wide distribution of average radon concentrations that have been observed. Groundwater is also a substantial radon source in limited areas. Water from wells in a variety of geological formations contains high concentrations of dissolved radon even though its radium content may be relatively low. Water use, such as in showers, dishwashers, etc., results in the release of radon into the home atmosphere. A third potential source of indoor radon is building materials that contain radium. While this source is usually unimportant, it can be of grave concern when contaminated building materials are used in construction, such as was done in Grand Junction, Colorado.

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Radon concentrations tend to be somewhat lower in the upper levels of multi-story buildings than they are near ground level. However, the prevalence of radium in soil and the relative ease with which radon gas can enter a structure create the potential for elevated radon concentrations in virtually every enclosed structure in the United States. In addition, structures built in areas of the country which have anomalously high radium concentrations in the soil, such as Florida phosphate lands, have an even greater possibility of high radon levels inside.

The hazards posed by increased levels of radon arise primarily from two of its short-lived radioactive decay products, polonium-218 and polonium-214. These decay products deposit in the lungs, where they decay and expose the epithelium of the bronchial tubes to alpha radiation. Such radiation exposure can lead to lung cancer.

Estimates of the health hazards associated with exposure to radon and its decay products are based on epidemiological studies of underground miners. A very high incidence of lung cancer among underground miners exposed to radon decay products has been well-documented. Studies of 4,146 American uranium miners have shown an excess of 173 lung cancer deaths over the expected number, even after adjusting for cigarette smoking and other contributing factors. Current estimates of the increased risk of cancer resulting from radon exposure vary depending on how the occupational data are interpreted to derive a risk value for the general population. Many in the scientific community attribute 5,000-20,000 deaths from lung cancer each year to exposure to radon in structures. Currently about 100,000 die from lung cancer annually.

Current estimates suggest that a person may double his risk of lung cancer with a cumulative exposure of about 20-100 working level months (WLM). (The WLM is used to measure exposure to radon decay products.) The average national lung cancer risk is about 3 in 100. Exposure levels measured in structures range from about 0.02 WLM per year to 200 WLM per year. Therefore, exposure to these levels for 50 years could result in a cumulative exposure of about 1 to 10,000 WLM. This could increase a person's risk of lung cancer by as much as a factor of 30.

Need for Federal Involvement

Growing public and Congressional concern over the effects of indoor air pollution has led to discussion about the appropriate role of the

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Federal government in this area. The Federal government has an obligation to the public to identify health risks in the country and to provide guidance and assistance to State and local governments and the public in assessing and mitigating these risks. Any Federal action in response to indoor air pollution must be sensitive to the idea that a man's home is his castle. It is recognized that housing controls, such as zoning and building code requirements, are traditionally managed on the State and local levels. However, the Federal government can meet its responsibilities without necessarily infringing on State and local perogatives or individual rights.

Several Federal programs, as well, need guidance on managing the problem of radon in structures. The Residential Conservation Service Federal Standby Plan requires that utilities provide energy audits and recommendations for improved energy conservation to their consumers. Federal utilities, such as the Bonneville Power Administration and the Tennessee Valley Authority, have implemented weatherization programs to tighten up homes which they serve. In the latter case, the Federal government has mandated tighter, more energy efficient homes; it is thus responsible for assuring that such actions do not jeopardize the public health by increasing the levels of radon inside these homes.

In addition, some elements of the Department of Energy's conservation programs may be at odds with a goal of reducing public exposure to radon in structures. The hazards associated with radon in structures may have serious implications for alternative energy sources, such as solar power. Heat storage beds in solar-heated buildings are often comprised of stone which may have a very high radium content. Similarly, the Department of Housing and Urban Development is mandated by statute to insure that all HUD-assisted projects are located in safe and healthful environments. This includes not only public buildings, but also individual houses. HUD has disapproved, in several cases, VA and FHA loans to potential buyers of houses with elevated radon levels.

The Federal government may have the necessary statutory vehicles to deal effectively with this problem without an explicit Congressional mandate. The EPA is charged with the responsibility to protect public health. By Executive Order and through the Atomic Energy Act, the Agency has the authority to advise the President with regard to radiation matters directly or indirectly affecting health, including general guidance to Federal agencies in the development of criteria for protection against ionizing radiation. In addition, the Public Health Service Act enables the Agency to conduct monitoring of radiation hazards, as well as to provide technical assistance to the States.

There is growing recognition of the need for Federal leadership and guidance in the area of indoor air pollution. This need was confirmed by the Congress in FY 1984 and again in FY 1985. Two million dollars in each of these fiscal years were appropriated to the EPA expressly for research in this area. EPA acknowledged the significance of radon by spending a portion of this money to investigate indoor radon. In addition, various groups in the scientific community have advocated a strong Federal role in

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determining the extent of exposure and the public health ramifications. In 1980, the United States Radiation Policy Council's "Report of the Task Force on Radon in Structures" recommended a national assessment to characterize radon exposure in structures. More recently, the National Council on Radiation Protection and Measurements, in its Report No. 77, urged EPA to determine the actual national exposure distribution and to develop further knowledge of the extent of remedial action required to reduce exposures to specific levels.

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Past and Current Efforts

In recent years, a number of Government agencies have conducted field measurements of radon in structures. Most of these have been in areas where radium contamination problems were believed to exist. Interest in this issue was first aroused more than ten years ago when the use of uranium mill tailings in structures in Grand Junction, Colorado, came to national attention. In the mid-seventies, EPA also identified and studied elevated radon levels in structures built on phosphate lands in Florida. Most recently, extremely high levels of radon have been found in structures located near Boyertown, Pennsylvania. Confirmed levels in some of these homes are thousands of times greater than normal outdoor levels.

Indoor radon measurements have been made in a number of other areas by various Federal and State agencies. Some of these measurements were taken in locations that were not considered to be examples of radium contamination. A relatively large percentage of the houses surveyed in these areas had high indoor radon levels. These findings indicate such levels are not peculiar to areas with anomalously high radium content in the soil, but in fact may occur in any structure in the United States.

In response to a request by the Governor of Montana, EPA initiated a substantial measurement effort in 1981, in cooperation with the Montana Department of Health and Environmental Sciences, to determine radon levels in selected homes in Butte, Montana. The principal EPA objective in this study was to develop and test measurement protocols for estimating long-term average radon levels in houses with short-term inexpensive, simple methods. Measurement results are currently being analyzed to determine the effectiveness of various techniques for the measurement of radon and radon decay products. The Department of Energy's Environmental Measurements Laboratory is beginning a series of international radon measurement intercomparisons, involving DOE, DOE-contractor and EPA laboratories, as well as other U.S. and foreign institutions.

The EPA allocated $350,000 to study radon of the $2 million appropriated by Congress in FY 1984 to study indoor air pollution. Approximately the same amount has been earmarked in FY 1985. Efforts will include characterization of soil and water as sources, evaluation of mitigation techniques, and improvement of measurement techniques. The DOE is expected to continue its research programs directed at improving the understanding of the phenomena of radon production and transport into structures, radon decay product attachment to atmospheric particulates, deposition on room surfaces and in the respiratory tract, and the consequent dose to critical lung cells.

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The interest in indoor radon goes beyond the United States. Many countries, including Sweden, Canada, Great Britain, and Russia have conducted or plan to conduct large scale surveys of radon levels in homes. Canada and Sweden already have national standards for indoor radon in place. In addition, there is growing international cooperation and coordination of research efforts.

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Information Needs

The following are broad categories of information needs to further understand the problem of radon in structures:

1. Distribution of levels: Existing data on radon levels in inhabited structures are insufficient to permit an accurate assessment of the health risks associated with current and possible future exposure of the U.S. population. Most of this information has been developed in response to unusual exposure situations, such as contaminated sites, construction on reclaimed phosphate land, etc. Additional information is needed on the frequency distribution of exposures in "normal" settings since this will represent the greatest exposure to the population. This information should also include factors which influence the distribution.

2. Measurement techniques: Low-cost, simple measurement techniques and protocols are needed for routine use that will yield reliable data on long-term radon or radon decay product concentration in structures.

3. Factors which influence levels: Two of the most important factors influencing radon levels in structures are the characteristics of the land on which the structure is built and the air exchange rate within the structure, particularly the effects of energy conservation methods. Identifying land characteristics which can lead to high radon levels is important so that preventive construction techniques can be used in these areas. Similarly, determining the influence of energy conservation methods on the radon level inside a structure can lead to the use of methods which will minimize their effect on that level.

4. Remedial and preventive techniques: Effective, inexpensive techniques are needed to reduce radon concentrations in existing structures and to keep the concentration low in new structures. Various mitigation techniques and new construction methods should be tested to evaluate their effectiveness in reducing radon levels in structures. Field validation of the effectiveness of mitigation methods is an essential program need.

These information requirements can be met through a carefully designed program aimed at determining the national radon exposure distribution, identifying factors which influence this distribution, and developing recommendations on ways to reduce exposure.

The Program

The following proposed program spans five years. At the end of this period, an understanding of the distribution and levels of radon throughout

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the U.S. and the means available to prevent or ameliorate high levels of radon could be achieved. This knowledge should be adequate to allow us to prepare recommendations for use by Federal, State, and local health officials in determining where unreasonable hazards exist and ways in which they can be prevented or ameliorated. The Agency does not have authority to promulgate regulatory standards governing acceptable levels of radon exposure within structures and does not believe that establishing standards is the proper approach to this problem. Instead, general guidance and recommendations should be developed that would provide the basis for incorporation of improved practices into local building codes and new construction, as well as provide the basis for any ameliorative actions or recommendations taken by Federal, State, or local governments.

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Proposed resource requirements are:

YEAR	TFTE	EX$ (000)
1	14	1,000
2	23	1,675
3	20	1,400
4	15	700
5	12	500

Program objectives include:

1. Development of simple and inexpensive measurement protocols;
2. Conduct of a national assessment of radon exposure*;
3. Field validation of various construction methods;
4. Field validation of inexpensive and effective remedial techniques;
5. Identification of land characteristics which can lead to high levels; and
6. Issuance of Agency guidance and recommendations to Federal, State, and local governments.

As can be seen from these objectives, the program is designed not only to identify the extent of the health hazard associated with elevated radon levels in structures, but also to investigate and provide guidance on various mitigation technologies and preventive techniques. A stigma is now attached to having elevated radon levels in a home; owners fear that the value of their homes will decrease as a result of such a discovery.

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* A national assessment of radon exposure would be conducted in cooperation with the States and the Conference of Radiation Control Program Directors. These groups have the closest contact with the problems in the States and working with these groups would make the most efficient use of available resources.

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It is necessary to convince the public that while radon presents a significant health risk, it is not an insurmountable problem. A major objective of the program is to demonstrate that measures that will reduce elevated indoor radon levels by at least 90% can be installed for a few hundred dollars per structure. This would put the problem on the same economic scale as installing a sump pump in one's basement to correct a water problem. However, in the case of radon, their would be a large number of health effects averted per dollar spent.

Attachment A provides a more detailed explanation of the program, including scheduled milestones and associated resource requirements.

Conclusion

There is little dispute that exposure to excessive levels of radon poses a significant threat to public health. The hazard associated with radon in structures is likely to intensify as more attention is focused on energy efficient buildings. Although there may be limitations on what we can achieve in existing structures, we should move now to develop a national strategy to avert the probability of an even greater threat to public health.

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Attachment A

RADON ASSESSMENT AND MITIGATION PROGRAM

It is expected that the distribution of radon levels in structures within the United States will follow a distribution curve with a shape similar to that in Figure 1. The first step in developing a national strategy to address the problem of elevated radon levels in structures is to better define this distribution curve. The results of a national assessment of indoor radon levels will provide this necessary information. One can then determine the impact of selecting a level above which corrective action is recommended in order to reduce the risk of lung cancer. The program will not only identify characteristics of areas with elevated levels, but also will provide guidance on inexpensive and readily available mitigation techniques. Various types of mitigation methods will be investigated and field-validated to determine the most feasible ones.

Adoption of the proposed program will have major long-term implications for public health. As a result of investigating various construction practices and energy conservation methods, specific guidance on techniques to prevent the infiltration of radon gas into newly-built structures can be developed. Acceptance of this guidance into construction practices would preclude any increase in the average level of radon in U.S. homes. (This can be thought of as preventing a shift of the distribution curve to the right. See Figure 1.)

Similarly, by reducing the levels in existing structures through the application of inexpensive mitigation techniques, the average may actually be reduced; i.e. the distribution curve would shift to the left. Ultimately, the number of lung cancers caused by exposure to radon in structures would decline significantly. The more widespread the use of control methods and preventive techniques, the greater the reduction in health risks.

The program spans a five-year period. A description of the resource requirements and milestones for each fiscal year follows. Table 1 provides a milestone chart of the key elements in the program.

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YEAR 1 — 14 FTE — $1,000,000 Extramural Funds

- Complete pilot study of national assessment procedures
- Complete design of data handling system for national assessment
- Start evaluation of mitigation technologies
- Start evaluation of construction practices
- Complete design of national assessment

YEAR 2 — 23 FTE — $1,675,000 Extramural Funds

- Start national assessment
- Continue evaluation of mitigation technologies
- Continue evaluation of construction practices
- Start evaluation of energy conservation methods and their effects of radon levels in structures

YEAR 3 — 20 FTE — $1,400,000 Extramural Funds

- Complete measurement component of national assessment
- Start source characterization of areas with elevated levels
- Start statistical analyses of data, including defining the national distribution
- Continue evaluation of mitigation technologies
- Continue evaluation of construction practices
- Continue evaluation of energy conservation methods

YEAR 4 — 15 FTE — $700,000 Extramural Funds

- Start development of Agency guidance and recommendations
- Complete report on mitigation technologies
- Complete report on construction practices
- Complete report on energy conservation methods
- Start development of implementation handbook
- Continue characterization of areas with elevated levels
- Complete national assessment

YEAR 5 — 12 FTE — $500,000 Extramural Funds

- Issue Agency guidance and recommendations
- Complete implementation handbook
- Complete report on source characterization work
- Provide technical assistance

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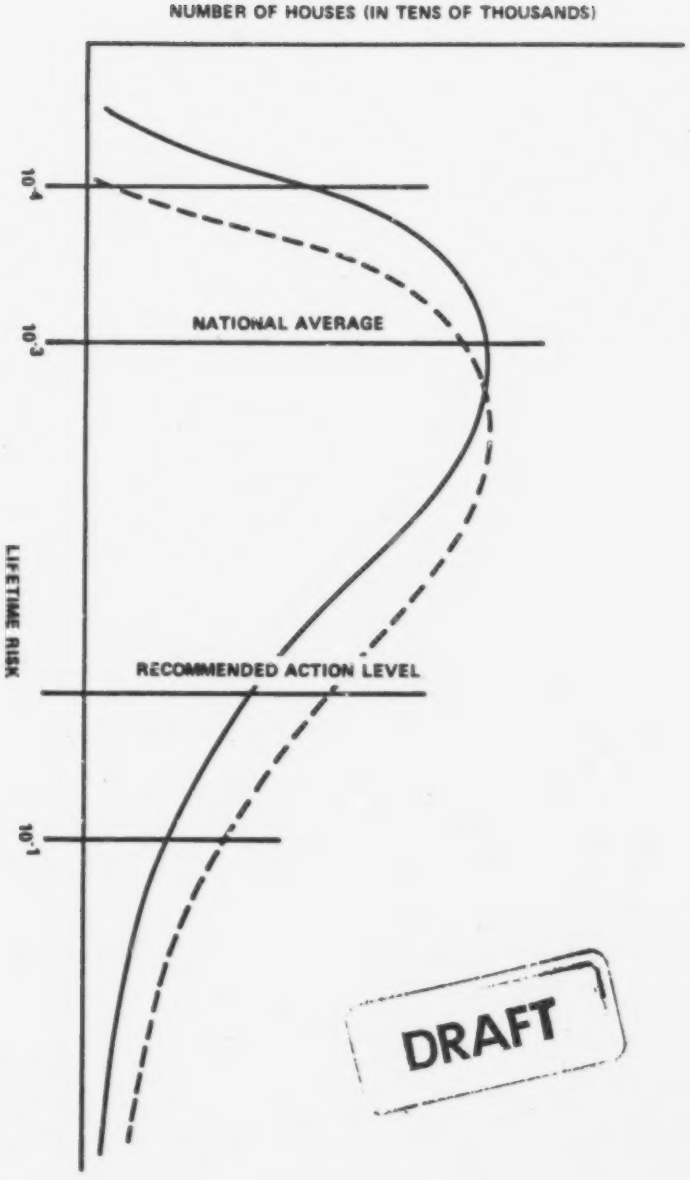
NUMBER OF HOUSES (IN TENS OF THOUSANDS)
LIFETIME RISK
10^{-4}
10^{-3}
10^{-1}
NATIONAL AVERAGE
RECOMMENDED ACTION LEVEL

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TABLE 1
MILESTONES
RADON ASSESSMENT AND MITIGATION PROGRAM

Accomplishment	YEAR 1 Q1 Q2 Q3 Q4	YEAR 2 Q1 Q2 Q3 Q4	YEAR 3 Q1 Q2 Q3 Q4	YEAR 4 Q1 Q2 Q3 Q4	YEAR 5 Q1 Q2 Q3 Q4
Pilot Study of National Assessment Procedures	S C				
National Assessment		S		C	
Evaluation of Mitigation Technologies	S			C	
Evaluation of Construction Practices	S			C	
Evaluation of the Effects of Energy Conservation Methods		S		C	
Source Characterization of Areas with Elevated Levels			S		C
Develop Agency Guidance and Recommendations				S	C
Develop Implementation and Guidance Manuals				S	C
Provide Technical Assistance					

S = Start
C = Complete

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Senator Mitchell

Question 4

Provide a statement explaining why the Agency rejected the Office of Air and Radiation's proposed program and funding for indoor air and radon.

Answer 4

The Agency did not proceed with the proposed indoor air initiatives in the FY 1986 Budget process due to overall Agency resource constraints and the absence of statutory or regulatory authority. The indoor air initiatives were considered to be a low Agency priority when compared to other Agency resource needs.

Senator Mitchell

Question 5

What does the Agency plan to do in the future on this issue?

Answer 5

The Agency is currently reassessing its role with the issue. The Administrator and I have received several briefings on indoor air and we expect that a number of options will be presented later this summer for our consideration in preparation for our next budget submission.

As noted previously, we are continuing a number of activities which are yielding important information on indoor air conditions. In particular, EPA is continuing the development and testing of personal air monitors which allow collection of data on individual exposure to air pollutants. We are integrating this information into the on-going work to assess total exposure to air pollution. Finally, Agency research on mitigation measures for high indoor radon levels is continuing in several states.

Senator Mitchell

Question 6

Please provide an outline of the major scientific issues concerning acid rain that the Agency believes warrant further study together with the Agency's plans, timetables and expectations regarding those issues.

Answer 6

There are several areas in which we believe the lack of either specific or general scientific understanding impairs our ability to make a prudent decision on an appropriate response to the acid rain problem. These uncertainties fall into the two general categories: effects and atmospheric processes.

Effects

There are several potential effects from acid deposition, including effects on surface waters, crops, materials and human health. All of these areas are currently being examined by the National Acid Precipitation Assessment Program (NAPAP) in which EPA is an active participant. Two of these effects areas, forest damage and aquatic damage, are of the most immediate concern for policy development. In both the areas the kind of questions which need to be answered are similar. They are the extent and magnitude of damage, a quantitative understanding of the relative roles various atmospheric deposition pollutants serve in causing this damage, and a prognosis of future damage at anticipated deposition levels.

The task of answering these questions for forest effects is made particularly difficult because, unlike aquatic effects, it is currently unclear if sulfur or nitrogen deposition is a causative factor.

Aquatic Effects

To determine the scope of aquatic damage, we have initiated a national surface water survey. This survey is intended to address both lakes and streams and examine both Eastern and Western surface waters. The entire effort will be done in sequential phases starting with lakes in the Eastern U.S., followed by Western lakes and Eastern streams. Field sampling for the Eastern lake survey has been completed with data validation and analysis to be completed and available this fall. Pilot work on streams has already begun and the Western lake survey is scheduled to begin this fall. If the stream survey pilot is successful, the results of the full stream survey should be available early in calendar year 1987. Western Lake Survey results should be available in the fall of 1986.

To address the question of prognosis, we have initiated a "Direct/Delayed Response" research program. The overall research plan for this effort has already passed peer review. Implementation will

start this summer with results anticipated by early 1987. The effort should tell us what parts of the country are susceptible to future deposition and the time frame in which these susceptible areas would respond. Scientifically, it is a highly ambitious effort that was developed as a direct result of consultation with the National Academy of Sciences.

Forest Effects

As with aquatic effects, we are moving ahead simultaneously on work to determine the scope of existing damage, the mechanisms involved and a prognosis of potential damage in the future. This effort is made particularly difficult by the lack of clearly established cause and effect mechanisms for either sulfur or nitrogen deposition.

Determining the scope of current "damage" is made difficult by the lack of standard methods and field experience in detecting and measuring air pollution effects on forests. EPA and other participants in the National Acid Precipitation Assessment Program are therefore initiating pilot studies for new methods development and will submit our research plans for extensive peer review to insure that field surveys will be meaningful and applicable to policy development. The methods development pilot effort is currently underway and, if successful, should result in the initiation of a full-scale survey effort by the summer of 1988. Until we have evaluated the success of the pilot effort, a completion date for the forest survey will remain uncertain. However, interim results from the pilot effort and analyses of existing data should be available by the fall of 1987.

Work on determining the precise mechanisms of damage is essential to both identifying the pollutants of concern and making a prognosis of future damage. This mechanistic research will be done on several forest types, with spruce/fir and southern conifers being of highest priority. Plans for this work are currently being completed and the overall research strategy has been favorably peer reviewed. Actual experimental work is expected to begin as early as the fall of 1985. Because this work will consist of a large number of individual projects, results will be incremental. Some significant understanding could emerge early in the process (within two to three growing seasons). However, much of the work will take longer, and there is no way to predict when or what results will come first. This work is important because without it we have no way to assess the cause and effect relationship for any specific atmospheric pollutant and consequently, no way to estimate what levels of exposure to what pollutants would be needed to protect sensitive forest ecosystems.

Atmospheric Process

A sound predictive understanding of atmospheric processes is a pre-requisite to making any prescription for emissions reduction in which we can assume with confidence the achievement of regional and local deposition

goals. With the current state of the art, we can predict what a large regional reduction would mean in terms of an average reduction over a large receptor area, but we lack the ability to assure that these reductions will be achieved at any specific receptor sites of concern. In other words, a 50% reduction of emissions in the Eastern half of the U.S. would likely result in a 50% total deposition reduction over the same area, but we cannot predict specific reductions for any specific sensitive area.

To improve upon our current level of understanding will require advancement in our scientific knowledge of several atmospheric processes. Of particular concern are the areas of aqueous and non-aqueous chemistry and the mechanisms of dry deposition. To be useful in making predictions, this information must not only be obtained by careful research but also be incorporated within mathematical atmospheric models which simulate the behavior and fate of atmospheric emissions. Work in both empirical atmospheric science and model development is currently under way. Model development is proceeding on two fronts. First is the development of a comprehensive (scientific) model which will incorporate the current state of scientific understanding. Second is the development of a much more simplified form of the scientific model referred to as an engineering model. The engineering model is intended to be in a form abbreviated enough to be applicable for policy analysis while at the same time capable of making predictions that will be in general agreement with those of the much more complicated scientific model. Work on the scientific model (the Regional Acid Deposition Model or RADM) has been under way since 1983. Developmental work is expected to continue and, depending upon the rate of success, should be ready for testing by the end of calendar year 1985. Testing and subsequent revision could take up to three years before final completion and full documentation. Concurrent with RADM development is development of an engineering model addressing sulfur deposition. This second model is expected to be ready for testing by December of 1986, with revision and completion expected within the following year.

In the meantime, we are sponsoring an international review and comparison of existing acid deposition models, in hopes of gaining a better understanding of their precision and applicability. We expect the first report of this effort by September of this year.

In each of the areas listed above we do not need definitive answers or perfect information in order to make a decision. If early work on effects shows a more serious or rapidly developing problem than currently perceived, then we would have to settle for greater uncertainty before making a decision. If effects appear to be more limited and slow to develop, then we have more time for precision. The greater the precision with which we can prescribe a response, the more likely we can anticipate and limit its social and economic impact. More importantly, we would have greater confidence that whatever response is chosen will actually achieve the results intended.

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